OR-035-00-01

ENVIRONMENTAL ASSESSMENT

Level 3 Communications, LLC

Fiber Optic Cable Installation

Issaquah, Washington to Boise, Idaho City Pair

Bureau of Land Management

Right-of-Way OR55045

March 2000

List of Acronyms

3R	Reshape/Retime/Regenerate
AASHTO	American Association of State Highway Transportation Officials
ACEC	Area of Critical Environmental Concern
AD	After Death
AIRFA	American Indian Religious Freedom Act
AMA	Adaptive Management Area
APE	Area of Potential Effects
ARPA	Archaeological Resources Protection Act
ATV	All-terrain vehicle
BA	Biological Assessment
BLM	Bureau of Land Management
BOR	Bureau of Reclamation
BMP	Best Management Practices
BP	Before Present
BPA	Bonneville Power Administration
CSA	Contamination Screening Assessment
CE	Categorical Exclusion
CEQ	Council on Environmental Quality
CO	Carbon Monoxide
Corps	US Army Corps of Engineers
CSA	Contamination Screening Assessment
DEA	David Evans and Associates, Inc.
DNS	Determination of Non-Significance
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act of 1973, as amended
FLPMA	Federal Land Policy and Management Act
I-82	Interstate 82
I-84	Interstate 84
ICBEMP	Interior Columbia Basin Ecosystem Management Plan
ILA	In-Line Amplification
Level 3	Level 3 Communications, LLC
LWD	Large woody debris
MFP	Management Framework Plan
NAGPRA	Native American Graves Protection & Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
ODA	Oregon Department of Agriculture
ODEQ	Oregon Department of Environmental Quality
ODOT	Oregon Department of Transportation
ODFW	Oregon Department of Fish and Wildlife
ODSL	Oregon Division of State Lands
ONHP	Oregon Natural Heritage Program
PB	Parsons Brinckerhoff
PCE	Tetrachloroethene
POD	Plan of Development
RHCA	Riparian Habitat Conservation Area
RMP	Resource Management Plan
ROW	Right-of-way
SHPO	State Historic Preservation Office
SPCCP	Spill Prevention, Control and Containment Plan
TCP	Traditional Cultural Property
TUP	Temporary Use Permit
UPRR	Union Pacific Railroad
USDA	United States Department of Agriculture
USDI	United States Department of Interior
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
VRM	Visual Resource Management

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Baker Field Office
3165 10th Street
Baker City, Oregon 97814

1849-1999

IN REPLY REFER TO:

1791
2800
OR 55045

MAR - 9 2000

Dear Reviewer:

The Bureau of Land Management (BLM) has received an application for a right-of-way from Level 3 Communications, LLE. The right-of-way would authorize construction, operation and maintenance of a buried fiber optic cable on BLM-administered public lands. The larger Level 3 fiberoptic project would connect Boise, Idaho and Issaquah, Washington, increasing the capacity of potential internet communications. The proposed 450-mile route is mostly adjacent to existing public roads, railroads, and utility corridors. The proposed route crosses scattered parcels of BLM-administered public lands in the Vale District, Oregon, including Malheur, Baker, and Union Counties.

The applicant's environmental consultant, Parsons Brinckerhoff of Portland, Oregon, has completed an Environmental Assessment (EA), which has been adopted by the BLM as EA No. OR-035-00-01. All resource inventories, assessments, and supporting documentation to meet federal standards for the National Environmental Policy Act are also being completed by third-party contract.

The purpose of this letter is to inform you of the proposed project and provide an opportunity for you to review the enclosed EA and FONSI (Finding of No Significant Impact) prepared for the proposed right-of-way application. Additional copies of the EA and maps showing greater detail of the proposed route are available for inspection or distribution at the Baker Field Office (3165 Tenth Street) and the Vale District Office (100 Oregon Street) of the Bureau of Land Management, and at the Baker County Library.

The comment period for this EA begins the day following publication of the EA notice in the Baker City Herald, and extends for 30 days. If you have any comments or concerns regarding the proposed right-of-way, you may provide them in writing to Kata Bulinski of this office.

Comments, including names and street addresses of respondent, will be available for public review at the above address during regular business hours (7:45 a.m. to 4:30 p.m.), Monday through Friday, and may be published as part of the EA or related documents. Individual respondents may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your written comment. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection in their entirety.

Please call Kata at (541) 523-1325 if you have any questions or would like to review the EA or the proposed route across BLM administered lands in the Vale District.

Sincerely,

Penelope Dunn Woods

Penelope Dunn Woods
Field Manager

2 - Enclosures
1 - Environmental Assessment
2 - FONSI

ENVIRONMENTAL ASSESSMENT

Level 3 Communications, LLC
Fiber Optic Cable Installation
Issaquah, Washington to Boise, Idaho City Pair

Bureau of Land Management
Right-of-Way OR55045
Vale District
Baker and Malheur Resource Areas

Submitted Pursuant to the National Environmental Policy Act
42USC 4322(2)c

March 2000

EXECUTIVE SUMMARY

Level 3 Communications, LLC proposes to install a 12-conduit fiber optic network from Issaquah, Washington to Boise, Idaho that would significantly increase the capacity of voice, data and Internet communications. Installation of this new fiber optic network allows Internet users more service provider choice. In addition to the buried conduits that house the fiber optic cable, the network includes underground handholes approximately every 3,600 feet and In-Line Amplification and Reshape/Retime/Regenerate stations approximately every 60 miles. Use of multiple conduits provides opportunity for future expansion of the network without major additional construction. The proposed project provides an alternative to other carriers; thus, it creates infrastructure diversity. This diverse system allows other telecommunication providers to temporarily reroute their customers onto Level 3's system if their line breaks as the result of a disturbance.

This Environmental Assessment (EA) has been prepared under the National Environmental Policy Act (NEPA) guidelines for submittal to the Bureau of Land Management (BLM). The Issaquah, Washington to Boise, Idaho City Pair route of Level 3's nationwide network crosses BLM jurisdiction lands in eastern Oregon. In earlier stages of this project, a draft EA was prepared and the NEPA process was pursued to encompass all BLM, Forest Service (USFS) and Bureau of Reclamation (BOR) managed lands and canals traversed by the City Pair. The USFS Mt. Baker-Snoqualmie National Forest, Wenatchee National Forest, and Wallowa-Whitman National Forest as well as the BOR Upper Columbia and Snake River Districts satisfied NEPA compliance through categorical exclusions. The scope of this EA discloses a complete picture of Level 3's proposal which includes the impacts of the proposed project on BLM-administered public land, but also takes into account the connectivity of the route and any impacts the line would have on resources on BLM lands, whether the impacts resulted from Level 3's actions on federal or non-federal lands. Construction of this City Pair on private property, public rights-of-way, national forest lands, and canals commenced when applicable permits and clearances were issued to Level 3. At the time of the public comment period for the EA, construction is ongoing on non-BLM lands in Union, Baker and Malheur Counties, Oregon. Various federal, state and local permits stipulate conditions and mitigation measures for impacts associated with project construction on these lands.

A primary project objective is to provide a diverse route from other long distance carriers through unstable areas while utilizing existing rights-of-way corridors and previously disturbed areas as much as possible. The fiber optic cable route through eastern Oregon satisfies this objective primarily through the use of public road rights-of-way and private lands. The checkerboard nature of federal, county and private lands in the area of the proposed route also necessitates the crossing of a number of land parcels under the jurisdiction of the BLM. The proposed route on BLM lands would constitute new disturbance, most of which is located adjacent to existing roads or utility rights-of-way.

Scoping for this project began on March 23, 1999 with the publishing of the scoping notice in five newspapers and the mailing of scoping notices. The BLM and USFS sent scoping letters describing the proposed action to individuals, groups and agencies who may have an interest in the Level 3 project. The mailing included a project description, a map of the route, and a comment sheet to be sent back to the BLM Baker Resource Area and the Wenatchee National Forest. Rather than attempt to differentiate scoping comments pertaining only to BLM lands in eastern Oregon, all issues raised during the scoping comment period have been addressed in this EA.

The background data for this EA includes coordination with federal, state, and local agencies and Native American tribes with an interest in the project. This document presents the results of field investigations, literature research, potential impact analysis, and mitigation measures to minimize impacts.

To be in compliance with other federal, state, local, and tribal regulations, all required permits will be secured prior to construction activities beginning on their respective jurisdictions. Applications have been submitted for all required permits.

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1 PURPOSE AND NEED

The use of the Internet is growing at an increasing pace, which exerts more pressure on existing telecommunication networks. The purpose of this project is to increase available capacity and speed of telecommunication operations between the Pacific Northwest and other portions of the United States as well as the world. Level 3 Communications, LLC (Level 3) is currently building a nationwide long-haul fiber optic network for the transmission of long distance and data traffic. The network requires connecting the Northwest to the Intermountain region of the United States. This proposal provides a nationwide fiber optic network that offers unique increased fiber optic infrastructure capacity and diversity to long distance telecommunications providers and allows for future expansion without additional construction.

Specifically, the design of the Level 3 network requires a link between the Seattle area (Issaquah, Washington) and Boise, Idaho. Level 3's network between these two cities provides an alternate and diverse route to existing long distance telecommunications companies. A diverse route is needed in the event that a break in one provider's fiber optic line occurs. Users of the cut line could be rerouted off the downed area to other carriers. Although long distance telecommunication companies are competitors, their systems are connected to allow for rerouting traffic in such circumstances as system failure so that the public users have continuous long distance telecommunications service. Achieving this specific purpose generates a need for Level 3 to cross Bureau of Land Management (BLM) lands in eastern Oregon (Figure 1).

To achieve the purpose of this proposal to increase capacity of telecommunications, several key objectives are significant decision-making variables. One objective is to construct a route that minimizes environmental impacts to the greatest extent possible. The means to accomplish this objective has been to concentrate the network adjacent to previously disturbed and existing roads, railroads and utility corridor rights-of-way (ROWs) where possible. Another objective is to assure the design meets construction feasibility. And lastly, the proposal must be economically justifiable.

Issuing Level 3 a Right-of-Way Grant on BLM lands is a federal undertaking that may potentially cause impacts to the environment for which the BLM must comply with the National Environmental Policy Act (NEPA; P.L. 91-190) of 1969. The proposed route alternative crosses lands within the Baker and Malheur Resource Areas of the BLM Vale District. The Baker Resource Area is coordinating agency project management.

An Environmental Assessment (EA) has been prepared for the BLM in order to comply with the NEPA process and agency guidelines.

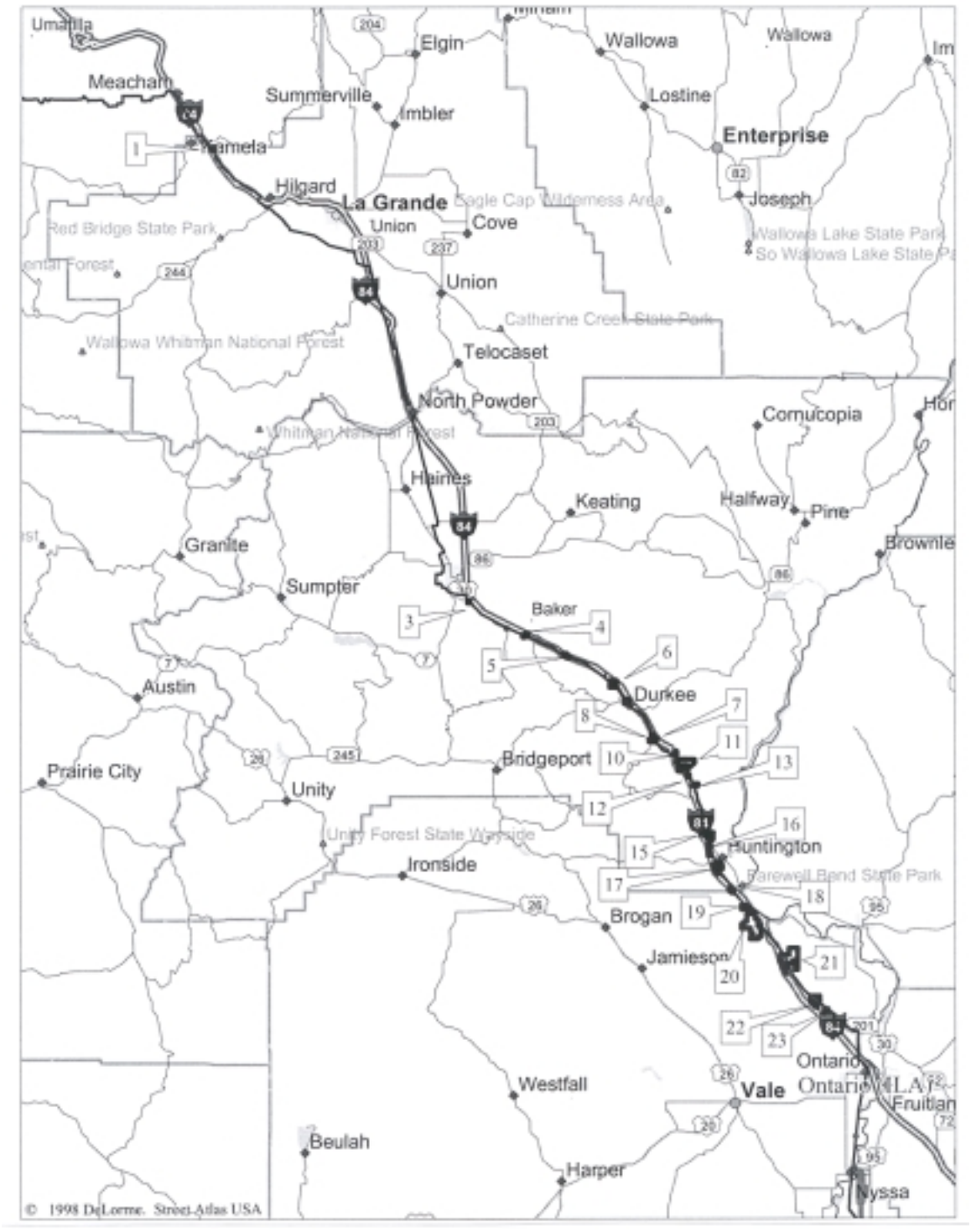

Figure 1. Vicinity Map of Proposed Route

Supporting documentation includes:

- Copies of permits and clearances issued to Level 3 to install and maintain a fiber optic network ROW on private property, public ROWs, USFS land, and BOR canal jurisdictions;

- A Plan of Development (POD) that implements mitigation measures into the construction plans; and

- A supplemental Biological Assessment (BA) that analyzes potential affects to federally listed Threatened and Endangered species for Endangered Species Act (ESA) Section 7 Consultation as well as potential affects to BLM sensitive species.

1.1 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

The purpose of the EA is to evaluate potential impacts of a federal action, which specifically is the issuance of a Right-of-Way Grant and Temporary Use Permit (TUP) to Level 3 in order to install a fiber optic network. The scope of this EA discloses a complete picture of Level 3's proposal which includes the impacts of the proposed project on BLM-administered public land, but also takes into account the connectivity of the route and any impacts the line would have on resources on BLM lands, whether the impacts resulted from Level 3's actions on federal or non-federal lands.

Construction of the Issaquah to Boise City Pair commenced on non-BLM lands when applicable permits and clearances were issued to Level 3. At the time of the public comment for the EA, construction is ongoing where permitted by other federal, state and local agencies (Copies of permits with overlapping or proximate jurisdiction to BLM lands in eastern Oregon have been provided to the BLM). These permits typically have conditions of approval or required mitigation measures for construction activities occurring within the respective jurisdictions.

The EA evaluates potential impacts caused by the project. Chapter 1 contains a project description and identifies the multiple regulatory agencies and permits required for project authorization. Alternative routes are presented in Chapter 2. The affected environment is described in Chapter 3. Chapter 4 concludes with an assessment of environmental consequences.

1.2 PROJECT DESCRIPTION

Level 3 Communications, LLC proposes to install a 12-conduit fiber optic network from Issaquah, Washington to Boise, Idaho that would significantly increase the capacity of voice, data and Internet communications. Use of multiple conduits provides opportunity for future expansion of the network without major additional

construction. Moreover, repairs can easily be made, with minimal ground disturbance, to a faulty section of the cable by removal and replacement of the conduit between handholes. Upon completion of installing the multiple conduit network, two conduits will be filled with fiber optic cable. The remaining ten conduits will be filled upon market demand. Subsequent environmental clearance and authorization will be required from BLM in order to fill the remaining ten conduits as well as to access handholes for repairs.

In addition to the 12 conduits, the fiber optic line will typically include buried handholes every 3,600 feet, marker posts every 500 feet, and In-Line Amplification (ILA) Stations or Reshape/Retime/Regenerate (3R) Stations approximately every 60 miles. ILA and 3R stations will be located on privately owned land that allows for this type of development and use.

The entire line is approximately 536 miles long from Issaquah to Boise. BLM lands crossed by the proposed route comprise 51,973 linear feet (9.8 miles). The proposed Level 3 ROW crosses twenty BLM parcels. The proposed route on BLM lands would constitute new disturbance, most of which is located adjacent to existing roads or utility rights-of-way. Table 1 indicates the Level 3 ROW distance by BLM parcel. A Right-of-Way Grant is requested by Level 3 to establish a ten-foot wide ROW across BLM lands (11.9 acres).

Table 1. BLM Lands Crossed by the Proposed Route

Parcel	Twp	Rge	Section(s)	County	USGS Quad	Linear Distance (ft)
1	2S	36E	5	Union	Huron	1043
3	9S	40E	33, 34	Baker	Bowen Valley	535
4	10S	41E	15, 22	Baker	Encina	80
5	10S	42E	30	Baker	Oxman	3335
6	11S	42E, 43E	12, 7, 18	Baker	Durkee	4820
7	12S	43E	11	Baker	Durkee	1730
8	12S	43E	14	Baker	Durkee	1825
10	12S	44E	19	Baker	Big Lookout Mt.	455
11	12S	44E	29, 30	Baker	Lime	7569
12	12S	44E	33	Baker	Lime	715
13	13S	44E	3, 4, 10	Baker	Lime	1040
15	13S, 14S	44E	35, 2	Baker	Lime	1285

Parcel	Twp	Rge	Section(s)	County	USGS Quad	Linear Distance (ft)
16	14S	44E	2, 11	Baker	Huntington	245
17	14S	44E	13, 24	Baker	Huntington	3817
18	15S	44E, 45E	31, 32, 5	Baker/Malheur	Olds Ferry	124
19	15S	45E	9	Malheur	Olds Ferry	1087
20	15S	45E	16, 15, 22	Malheur	Olds Ferry	8116
21	16S	46E	6, 7	Malheur	Tub Mt.	6459
22	16S	46E	28, 27, 34	Malheur	Moores Hollow	7124
23	17S	46E	2	Malheur	Malheur Butte	569

Table 2. Summary of Right-of-Way and Temporary Use Permit Dimensions

Workspace Requirements	Linear Distance (feet)	Area (acres)
Right-of-Way (10-foot width)	51,973	11.9
Temporary Use Permit Areas		
Construction Easement		
2-foot width	644	0.0
5-foot width	1,994	0.2
20-foot width	48,716	22.4
40-foot width	619	0.6
Access Roads to ROW		
15-foot width	15,855	5.5
25-foot width	0	0
Bore Operation Areas	each area can be a maximum of 200-ft by 300-ft	16.1
Total		
Right-of-Way	51,973	11.9
Temporary Use	67,828	44.7

A Temporary Use Permit (TUP) is also being requested for temporary construction and restoration typically comprising an additional 20-foot wide corridor wholly or partially adjacent to either side of the ROW. Exceptions to the typical 20-foot temporary construction workspace are in environmentally sensitive areas where the total construction corridor width will be limited to 12- or 15-feet, at directional bore sites (each bore has an entry staging area approximately 300-feet by 200-feet and an exit staging area approximately 200-feet by 200-feet), at one site requiring a 50-foot wide corridor to construct along a hill slope, and access roads to the ROW. Table 2 summarizes the dimensions of the proposed ROW Grant and TUP.

Typical construction methods on BLM lands comprise the following activities:

- A clearing crew using a bulldozer will clear vegetation from the pre-staked construction area and place necessary erosion control measures. Clearing will consist of removing or trimming small trees and brush only if necessary to safely maneuver equipment within the temporary construction corridor. Vegetation will not be removed in sensitive high or medium value streams and wetlands where directional boring will be used.

- A backhoe or vacuum truck will expose utilities ("potholing").

- Upon completion of any necessary vegetation clearing or trimming and utility locating, the conventional or spider plow will typically make one pass to "pre-rip" the furrow in which the conduit will be placed. Then, the conduit will be installed using conventional or spider plowing, trenching, and directional boring methods.

- The decision to trench, either by backhoe or in combination with a rocksaw, will depend upon site conditions. In areas of subterranean rock, which may not be discovered until the pre-rip occurs, a rocksaw will be used to cut a trench approximately 54 inches in depth.

- If trenching occurs, vegetation and topsoil saving mitigation measures (refer to Chapter 2) will be followed.

- Directional boring will be employed where plowing and trenching are not practical or would impact sensitive areas. Boring will be used to cross beneath many roads, railroads, river and stream channels, wetlands, and utilities.

- The restoration field crew will contour the disturbed areas to pre-construction elevations. The equipment chosen to recontour may include a bulldozer, backhoe or grader depending on the slope and soil present. Erosion control methods will be site specific, and may include silt fencing, certified Oregon weed seed free straw bale barriers, terracing, and erosion control matting (all erosion control matting will be biodegradable and BLM authorized).

Construction methods are described in further detail in the next section. The POD and Construction Drawings identify which equipment will be used for each BLM parcel.

1.2.1 Equipment and Facilities

Fiber Optic Cable

The proposed fiber optic cables are 0.875 inches in diameter. The cable is protected by a conduit made of polyvinyl chloride or other similar inert material, i.e., high-density polyethylene, approximately 1.25 inches in diameter. The conduit allows removal of the cable in the event that the cable is damaged or broken accidentally. A 12-conduit bundle is buried with a minimum 42-inch depth of cover, except where bedrock precludes this depth, to form the backbone of the fiber optic network. After conduit burial, the fiber optic cable is pulled through and spliced at handholes.

Handholes

The handhole is a 30-inch by 48-inch by 30-inch (depth/length/width) concrete and fiberglass composite structure that is used to house splices and as a point of access to the fiber optic cable for maintenance. The handholes are installed at periodic intervals of approximately 3,600 feet along the network line. They are buried six to 24 inches below the surface of the ground.

Marker Posts and Warning Tape

Marker posts are used to identify the presence of buried fiber optic cable network. These posts will be installed approximately every 500 feet within the ROW on BLM lands, will not exceed four feet in height, and will be painted an environmentally blending color approved by the BLM.

Marker posts will be located in the 10-foot ROW. A warning message is posted on the marker and a “Call Before You Dig” toll-free phone number is listed. By calling this number, a utility locate service comes to the site to locate the fiber optic cable in order to prevent accidental damage to the cable.

Warning tape will be placed below grade approximately one foot directly above the buried conduit. This tape is a protective measure to prevent further excavation and damage to the fiber optic network. A “Call Before You Dig” toll-free phone number is printed on the tape.

In-Line Amplification and Reshape/Retime/Regenerate Stations

Fiber optic technology requires that the light signal being transmitted through the fiber be amplified, or boosted, in order to keep the signal clear. A combination of In-Line Amplification (ILA) and Reshape/Retime/Regenerate (3R) stations are used for this purpose. No ILAs or 3Rs will be located on BLM lands.

1.2.2 Cable Installation

The primary construction methods involve conventional plowing, spider plowing, open trenching and directional boring. During construction on BLM administered public lands, environmental impact will be mitigated by:

- Selecting routes that minimize environmental issues;
- Using previously disturbed corridors;
- Directional boring streams, wetlands, and sensitive plant habitat;
- Avoiding significant or potentially significant cultural resources;
- Using erosion control methods such as silt fencing, certified Oregon weed seed free straw bale barriers, terracing, erosion control matting (all erosion control matting will be biodegradable and BLM authorized), or other appropriate methods;
- Reseeding with native species; and
- Implementing preventative, monitoring and treatment plans to reduce the spread of noxious weeds along the proposed route on BLM lands and other lands crossed by the Level 3 route in Union, Baker and Malheur Counties.

Common construction phases include:

- Surveying the route to stake the centerline for conduit installation;
- Exposing existing utilities;
- Clearing a 12-foot wide area along a pre-marked line (if necessary);
- Disturbing a section of the earth approximately 12 inches wide by 4 feet deep by means of plowing or trenching;
- Inserting PVC conduits within the trench while simultaneously backfilling the trench behind the conduit;
- Burying handhole structures to connect conduit;
- Proofing conduit for kinks or obstructions and fixing local problems;
- Blowing and splicing of fiber; and

- Restoring disturbed areas, which includes implementing revegetation and noxious weed mitigation measures along the proposed route on BLM lands and other lands crossed by the Level 3 route in Union, Baker and Malheur Counties.

Direct Burial – Conventional and Spider Plow Technology

Conventional plow technology uses a tracked bulldozer fitted with a cable reel on the front end and a conventional plow on the back end (Photo 1). The conventional plow is a single, straight-shafted blade, which opens a narrow furrow about 12 inches wide and four feet deep. The conduit is continually placed in the furrow, and as the plow moves ahead the trench closes in behind the plow. The plow leaves behind a small ridge of material approximately 12 inches above the original ground surface and a small open slot about 6 inches wide and 1 foot deep.

The spider plow is a rubber-tired piece of equipment with articulated arms to position itself in narrow or sloped areas that a conventional plow cannot easily maneuver. The spider plow has a blade and creates a furrow similar to the conventional plow, thus creating approximately the same type and quantity of disturbance.

Direct burial construction methods, conventional and spider plowing, greatly reduce potential impacts to the environment because of the speed of construction and the limited area of disturbance. Using this method, direct burial can generally install conduits at a walking pace, and in most areas, one equipment pass through an area is necessary. The construction corridor width required for the installation operation is approximately 12 feet. Conduit reel re-supply and equipment maneuvering may require a 30-foot wide temporary construction corridor.

[Photo not available on electronic document version]

Photo 1. Conventional Plow Train

Open Trench Construction

Open trench construction involves excavating a width of 12 inches and a depth of 54 inches that will allow for a 42-inch depth of cover. It is used in areas where soil and geologic conditions preclude the use of a conventional or spider plow. Equipment may vary but will include a trackhoe, a rubber tire backhoe or chain trenchers. Vegetation and topsoil saving mitigation measures (refer to Chapter 2) will be followed.

In some cases, trenching may be performed by a series of three trenchers working as a team. After vegetation and topsoil saving measures are employed, the first trencher will take the top 12 to 18 inches, the next will take the following 12 to 18 inches and the final trencher will take the trench to the needed depth. The conduit is placed in the trench, and as the backhoe excavates ahead, sidecast material is backfilled into the trench. When the fiber is placed at the edge of a road prism, the contractor may use an offset backhoe.

The installation will be completed with the placement of warning tape below the finished grade and with restoration practices specified in the POD. The surface will be regraded to conform to surrounding contours and restored with the appropriate topsoil and BLM approved seed mix. In areas where wetlands or other environmentally sensitive areas are in the vicinity of construction activities, appropriate erosion control methods (e.g., silt fencing) will be installed to control erosion and minimize the production and transport of sediment into such areas.

Directional Bore

Boring installs the conduit at a minimum depth of 4 feet below wetlands, 4 feet below intermittent streams, 10 feet below perennial streams, 4 feet below road grades, and 12 feet below railroad rail bases. Under no circumstances are streams, wetlands, asphalt or soil surfaces of bore sections to be disturbed or excavated in order to retrieve any lost boring apparatuses. Boring operations will adhere to the Pacfish/Infish/Screens Information Guide (Appendix A) and will stage equipment outside 100-year floodplain boundaries. All conduits are capped, sealed water tight, and well marked to allow locating.

In directional boring operations, a surface-operated drilling device is angled into the ground from the surface and directed to its destination using a radio-controlled mole that contains a cutter head. Personnel directing the mole on the ground control its depth and direction of drilling (Photo 2). This method can be used to cross highways, streams and wetlands, railroads, pipelines, city streets, culverts, and other similar features.

The directional bore construction method uses bentonite slurry to lubricate the cutter head of the boring equipment. The bentonite slurry is captured in a bore pit excavated on site. The drilling operation involves the continuous flow of drilling fluid into the borehole to lubricate the drilling equipment, maintain integrity and remove cuttings

from the borehole. The drilling fluid is primarily water and clay. The primary active clay component is bentonite, which is a naturally occurring, non-hazardous material. Because the drill system operates under pressure, there is a potential that drilling fluid could seep into streams, creeks or wetlands if fractures are present below the ground surface (approximately one out of eight bores may have this occurrence). Upon completion of a directional bore, all slurry is removed from the construction site and deposited at a local certified disposal facility.

A typical bore operation includes the following steps:

- Excavating one entry pit and one exit pit for each bore. Typically, the size of each pit is 4-feet (length) by 4-feet (width) by 4-feet (depth); however, the length of the bore is the key variable in determining exact bore pit size;
- Drilling a pilot hole, approximately 6-inches in diameter from the entry pit to the exit pit;
- Pre-reaming a 16-inch diameter hole from the exit pit back to the entry pit;
- Reaming the hole from the entry pit to the exit pit in order to swab out excess debris;
- Pulling conduit through the bored hole from the exit pit back to the entry pit; and
- Restoring bore pits and staging areas to original or better conditions by implementing clearing and grading, revegetation and noxious weed mitigation measures.

This construction method involves the following equipment: directional drilling rig, bentonite mixing truck with a tilt bed trailer, vacuum truck, water truck, boom truck, backhoe and several pickups. Bore staging areas are approximately 300-feet by 200-feet for entry sites and 200-feet by 200-feet for exit sites (Exact specifications may vary by site; refer to the POD and Construction Drawings). Six entry and six exit bore operation sites will be located on BLM parcels. Traffic associated with directional boring may involve 2-3 times as many ingress/egress trips to the site as compared to plowing and trenching construction methods. This is mainly due to supplying the operation with water from off-site as well as its subsequent disposal to a designated facility. The frequency of traffic associated with the operation is listed in Table 3.

The drilling rig and backhoe are hauled to and from the site using the tilt bed trailer. All trailers are typically left at the staging area; thus, one ingress/egress trip per bore occurs. Pickup trucks are used to transport personnel to and from the work site each day. Traffic frequencies for the vacuum and water trucks depend on the length of the bore and the type of substrate in which the bore encounters. The drilling rig, mixing truck, boom truck and backhoe remain at the site until the bore is completed.

Table 3. Traffic Quantities for Directional Boring Operations

Equipment	Frequency of Ingress/Egress Trips	
	Bores in Soil Substrate	**Bores in Rock Substrate**
Directional Drilling Rig	1 per bore	1 per bore
Bentonite Mixing Truck with Trailer	1 per bore	1 per bore
Vacuum Truck	1 per bore	1 per bore +1 per 80 ft of bore
Water Truck	1 per bore + 1 per 800 ft of bore	1 per bore + 1-6 per day
Boom Truck	1 per bore	1 per bore
Backhoe	1 per bore	1 per bore
2-3 Pickups with Trailers	1 per day	1 per day

Six directional bores will occur on BLM parcels to cross four intermittent streams, one perennial stream and one reservoir. One intermittent stream on Parcel 1 is part of the Grande Ronde River basin; the perennial stream on Parcel 5 and one intermittent stream on Parcel 13 are within the Burnt River basin; and the reservoir (Parcel 19) and remaining two intermittent stream crossings (Parcel 20) are part of the Snake River basin.

[Photo not available on electronic document version]

Photo 2. Directional Boring

Bedrock Construction

Certain portions of the route are known to have bedrock outcroppings or bedrock close to the ground surface. In other areas, soils have individual rocks of a large size present that prevent plowing. After excavating topsoil (if present) and saving it within the ROW, a rocksaw is used to cut the trench into which the conduit will be installed (Photo 3). A rocksaw or a backhoe may be used in these situations to create the trench for cable installation. Blasting will not be used for any construction.

As the trench is created, the excavated rock will be temporarily placed alongside the trench. Bedding material that will be placed in the trench must not damage the conduit. Suitable material originally removed from the trench will be used along with concrete slurry to protect the conduit if a minimum 42-inch depth of cover cannot be achieved. The material used for backfill will not include any large rocks with sharp edges that could potentially damage the conduit. These larger rocks will be placed back over the ROW when reclamation activities occur, or hauled offsite per approval of an authorized BLM officer.

In areas of exposed bedrock, the surface will be machine blade graded to match surrounding contours. In areas where there is a topsoil cover over the bedrock, the topsoil will be saved and replaced in its original position after conduit placement. The original contours will be reestablished and the area seeded.

Equipment Staging and Fueling

Three different types of staging areas have been identified:

- Construction yards for office trailers, major equipment storage and vehicle parking;
- Temporary or daily equipment and vehicle staging near ROW cable installation areas; and
- Directional boring operation areas.

The first two (construction yards and temporary staging areas) utilize turnouts, old rock pits, or areas on private lands along the route where equipment can be safely stored and serviced overnight. No BLM lands will be used for these two types of staging areas.

Bore operation areas, however, will be located on BLM parcels when bores are the proposed construction method. Six directional bores will occur on BLM parcels, which require a total of twelve bore staging areas. Bore locations and bore operation staging areas are indicated on the Construction Drawings (refer to the POD). Access to bore operation areas will utilize the same access routes as other construction methods that are indicated on the Attachment I Access Route Maps. The proposed staging areas on BLM lands will be field inspected and approved by an authorized BLM officer.

[Photo not available on electronic document version]

Photo 3. Bedrock Construction

Equipment servicing and fueling will occur only in staging areas except in case of emergency. In no cases will equipment servicing or fueling occur within 100-year floodplain boundaries. Bulk fuel (diesel) will usually be transported across BLM lands in 50- to 100-gallon tanks mounted on a pickup truck. Fueling trips will be from construction yards or temporary staging areas located off BLM lands to equipment working on BLM lands. A spill prevention and response plan will be implemented, which includes 48-hour notification of any spills to the BLM.

Access during Construction

Along the majority of the route, construction equipment will be aligned in a single line, like a train. Access to the construction corridor, as authorized by the BLM TUP, will use existing public roads, private roads, or other existing accesses that the alignment crosses. No new roads will be created as a result of this project. The EA addresses increased traffic on roads used for access. All roads utilized will be restored to pre-construction condition.

When construction methods change (i.e., go from plowing to boring), the equipment will demobilize to the closest access point and remobilize to where that type of construction method starts again. The 30-foot construction corridor allows for most switching and mobilization of equipment. If unanticipated or emergency access needs arise during construction, an authorized BLM officer will be notified and authorization obtained in advance.

Traffic associated with directional boring may involve 2-3 times as many ingress/egress trips to the site as compared to plowing and trenching construction methods. This is mainly due to supplying the operation with water from off-site as well as its subsequent disposal to a designated facility. Access routes to bore operation sites may be graveled, per authorization from a BLM officer, to reduce impacts.

Some sensitive areas have been identified along the route to be avoided by either routing around these areas or directional boring. Equipment will not enter the delineated boundaries of these resources. Equipment will be mobilized around these areas by backtracking to the closest existing access points.

1.3 OPERATION AND MAINTENANCE

Initial construction includes the burial of 12 conduits and placement of handholes approximately every 3,600 feet. Following conduit installation, 2 of the 12 conduits will be filled with fiber optic cable. Handholes are the necessary access points for this activity. Equipment required to fill conduits with fiber optic cable includes three-quarter or one ton trucks with compressors, light trucks and possibly a backhoe. Level 3 requests that the TUP issued for construction of the buried network includes activities necessary to fill two of the conduits with fiber optic cable. Subsequent

environmental clearance and authorization will be required from BLM in order to fill the remaining ten conduits, which includes obtaining authorized access to handholes.

Routine maintenance for the fiber optic network may include vehicular reconnaissance to inspect the Level 3 ROW when it is adjacent to public (state and county) roads. In cases where the ROW is not directly adjacent to public roads, pedestrian reconnaissance will occur.

Upon completion of construction for the buried network, "as-built" surveys that document the location of the network including handholes will be submitted to the BLM. The locations of handholes will be reviewed with BLM. Level 3 will reapply for vehicular entry to BLM lands to access handholes not located adjacent to public roads.

Other maintenance activities will be required if a break or failure in the network occurs. To replace failed fiber within a conduit, access to the network will be gained at handholes on either side of the failure and new fiber will be blown in and spliced. If conduits are damaged, new conduits will be installed. There is some potential that the 12-conduit network between handholes will need to be excavated in places for repairs or to add fiber optic cables in the future. Generally, however, most system repairs and installation of additional fiber optic cable in extra conduit can be accomplished through access at the handholes only. Typical repair operations will involve the use of backhoes and pickup trucks towing splice trailers. Authorization from BLM is required for access to handholes and for repair of the network.

1.4 ABANDONMENT

The expected lifetime of the fiber optic cable network, according to the manufacturers, is up to 20 years. Cable could be easily replaced if failures occur or new technology is developed.

At this time, it is not possible to know how long the conduits will be in use. The life expectancy of the cable begins once it is installed. It is possible that some cable could be removed and new cable installed; therefore, the useful life of the conduits will likely be longer than 20 years because of the different installation dates and replacement with technologically improved fiber optic cable.

At the end of conduit service, the conduit and cable will be abandoned in the ground. Marker posts and handholes on BLM lands will be removed, and the sites will be restored. As no lead or other hazardous material is used in this project, abandonment does not constitute a liability nor generate any subsequent environmental impacts. However, if the conduit material is determined to be a hazardous material in the future, Level 3 will be liable for the clean-up and removal.

Upon plans to abandon the network, Level 3 will prepare a termination plan to be approved by the BLM at that time.

1.5 PROJECT AUTHORIZATION FOR CONSTRUCTION ON PRIVATE PROPERTY, PUBLIC RIGHTS-OF-WAY, NATIONAL FOREST LAND AND BUREAU OF RECLAMATION CANALS

1.5.1 Federal Land

National Environmental Policy Act

In earlier stages of this project, a draft EA was prepared to encompass all federal lands and canals (BLM, US Forest Service (USFS) and Bureau of Reclamation (BOR)) traversed by the Issaquah to Boise alignment. The USFS Mt. Baker-Snoqualmie, Wenatchee, and Wallowa-Whitman National Forests, as well as the BOR Upper Columbia and Snake River Districts, later satisfied NEPA compliance through categorical exclusions (CEs).

Other Federal Permits and Clearances Required

There has been ongoing coordination with other federal agencies to acquire required permits. Federal permits that were obtained before commencing construction within respective jurisdictions are listed in Table 4. Copies of permits issued by federal agencies with overlapping or proximate jurisdiction have been provided to the BLM.

Table 4. Federal Permits Required

Jurisdiction	Permit
US Army Corps of Engineers	Section 404 / Nationwide 12
US Fish & Wildlife Service	Endangered Species Act Section 7 Consultation
National Marine Fisheries Service	Endangered Species Act Section 7 Consultation
US Forest Service	Special Use Permit
US Bureau of Reclamation	Crossing Agreement

The primary federal permit regulating wetland and stream crossings is the US Army Corps of Engineers Nationwide 12 Permit under the Section 404 of the Clean Water Act. The Wallowa-Whitman National Forest issued a Special Use Permit to establish a 10-foot utility ROW and install the network on USFS lands. BOR canal crossings are authorized by master crossing agreements. All federal permits require ESA Section 7 consultation for federally listed species.

1.5.2 State and Local Permits Required

All applicable state and local permits, summarized below, were obtained prior to construction (copies of permits issued by state and local agencies with overlapping or proximate jurisdiction have been provided to the BLM).

State of Oregon

In the State of Oregon, there are 19 statewide planning goals that serve as guidelines for the State's policies on land use and related topics. These planning goals are achieved through local comprehensive planning and zoning. Environmental review is incorporated into the local land use permitting process. The Oregon Removal-Fill Law requires a permit from the Oregon Division of State Lands (ODSL) for filling or removing 50 cubic yards or more of material in waters of the State, or any habitat of listed salmonid species. Mitigation for wetland impacts must be in accordance with the Oregon Freshwater Compensatory Mitigation Rules.

State and local permits that were obtained prior to commencing construction on private property, public ROWs, national forest land and BOR canals are listed in Table 5.

Table 5. Permits Required in Union, Baker and Malheur Counties

State	**Permit**
Division of State Lands	Removal-Fill Permit
Department of Environmental Quality	NPDES General Stormwater Permit
State Historic Preservation Office	National Historic Preservation Act Clearance
County	
Union County	Conditional Use Permit
Baker County	Conditional Use Permit
Malheur County	Conditional Use Permit
Other	
Powder Valley Water District	Memorandum of Understanding
Baker Valley Irrigation District	Memorandum of Understanding

Union County

Conditional Use approval is necessary for utility facility development in exclusive farm use and other resource zones in Union County. The request involves a hearing before the Planning Commission and must address the necessity of installing a utility in exclusive farm use zones. Generally, approval of the request includes various approval conditions that address restoration and liability issues. The Conditional Use Permit covers all development within the county whether the route is located on road rights-of-way or private property easements (excluding federal land). Level 3 received the Conditional Use Permit on June 16, 1999.

Specific conditions of approval required by Union County include:

- Reclamation bonds to assure satisfactory private property and public ROW restoration and weed control;

- Assumption of liability by Level 3 to protect normal agricultural, forestry and road maintenance practices, which includes filing a Covenant Not to Sue with the County Clerk;

- Timber production mitigation;
- Horizontal boring of streams and wetlands where possible; and
- Capability of accessing Level 3's network.

Baker County

Due to zoning regulations, a Conditional Use Permit is necessary for utility facility development in Baker County. The request involves a public hearing before the Planning Commission and must address how the proposal meets the Conditional Use Permit Approval Criteria. The Conditional Use permit covers all development within the county whether the route is located on road rights-of-way or private property easements (excluding federal land). No other environmental or land use approvals are required. Level 3 received the Conditional Use Permit on May 11, 1999.

Specific conditions of approval required by Baker County include:

- Establish the proposed use within two years of permit issuance;
- Obtain all applicable permits and private property easements;
- Comply with Baker County Weed Department stipulations including the posting of a performance bond;
- Provide the County with a final route map;
- Execute a Covenant Not to Sue to protect normal agricultural practices;
- Reserve network capacity for the County; and
- Provide the County with final plans ("as-builts") upon completion of the project.

Malheur County

Due to zoning regulations, a Conditional Use Permit is necessary for utility facility development in Malheur County. The request involves a public hearing before the Planning Commission and must address how the proposal meets the Conditional Use Permit Approval Criteria. The Conditional Use permit covers all development within the county whether the route is located on road or railroad rights-of-way or private property easements (excluding federal land). Level 3 received the Conditional Use Permit on June 24, 1999. No conditions of approval were attached to this permit.

Baker Valley Irrigation District

A Memorandum of Understanding was issued by the Baker Valley Irrigation District for three canal crossings under its jurisdiction. These crossings do not require

subsequent approval by BOR. Conditions of the MOU include pre-construction notification, appropriate utility locating, and directional boring of the canals.

Powder Valley Water District

A Memorandum of Understanding was issued by the Powder Valley Water District for two canal crossings under its jurisdiction. These crossings do not require subsequent approval by BOR. Conditions of the MOU include pre-construction notification, appropriate utility locating, and directional boring of the canals.

1.6 PROJECT AUTHORIZATION FOR CONSTRUCTION ON BLM LANDS

1.6.1 Right-of-Way Grant and Temporary Use Permit

A Right-of-Way Grant is a required authorization to use a specific piece of public land for the establishment of a utility line, such as a fiber optic network. The grant authorizes rights and privileges for a specific use of the land for a specific period of time. Generally, a BLM ROW is granted for a term commensurate with the life of the project. Level 3 is requesting a 10-foot wide ROW for the proposed route as it crosses BLM lands.

A Temporary Use Permit (three-year duration) authorizes additional temporary space for activities associated with the construction of the fiber optic network. Specifically, Level 3's TUP application includes workspace near the ROW for maneuvering and servicing equipment (typically an additional 20-foot corridor parallel to the 10-foot ROW), directional bore operation staging areas (approximately 300-feet by 200-feet for entry sites and 200-feet by 200-feet for exit sites), and use of access roads on BLM lands.

1.6.2 Consistency with BLM, State and County Land Use Plans

BLM districts have Resource Management Plans (RMPs) and Management Framework Plans (MFPs) to implement land use planning requirements pursuant to Title II of the Federal Land Policy and Management Act (Public Law 94-579, October 21, 1976). Applicable management guidance for authorization of new utility ROWs on BLM lands within the Baker and Malheur Resource Areas include the following:

- The Baker Resource Management Plan encourages ROW applicants to locate new rights-of-way adjacent to existing rights-of-way to the extent technically and economically feasible (USDI, 1989, p. 32).

- The Southern and Northern Malheur Resource Area Management Framework Plan requires ROW applicants to comply with the BLM's right-of-way

regulations (43 Code of Federal Regulations Part 2800), which include the preparation of environmental documents, consideration of alternative routes and/or use of existing corridors (USDI, 1983, p. 47).

- Instances where the proposed route crosses designated Oregon Trail Areas of Critical Environmental Concern require that "Rights-of-way will avoid the Oregon Trail" (USDI, 1989, p. 47).

In addition, other federal, state and county permits apply to construction activities on BLM lands and/or apply to project construction on adjacent non-BLM lands. For construction activities associated with installing the buried conduit network and filling 2 of the 12 conduits with fiber on BLM lands, compliance with Corps and State issued permits will occur in conjunction with BLM permit and clearance requirements. If BLM requires additional resource mitigation measures and construction stipulations not contained in other permits, then those requirements will supersede conditions of the other permits for construction on BLM lands. No permits or clearances will be intentionally violated.

Conditional Use Permits issued by Union, Baker and Malheur Counties apply to non-federal lands within the respective counties (summarized in section 1.5). Due to the noncontiguous distribution of BLM parcels, private properties, public road ROWs, and other federal lands and canals, a complex permitting context exists across the Level 3 alignment through eastern Oregon. Level 3 will comply with all permits and associated approval conditions issued for the entire route within applicable jurisdictions.

ACECs associated with the Oregon Trail require unique consideration to avoid direct impacts to the Trail, which the Level 3 proposed alignment does by avoiding all crossings of the Trail on BLM lands. Visual impacts resulting from installing the ROW within one-quarter mile of the Trail will be mitigated by limiting the total construction disturbance area to 15 feet in width, implementing revegetation practices consistent with surrounding vegetation, and painting marker posts an environmentally blending color. The Level 3 project in the ACECs is consistent with BLM management directives for these areas.

The proposed federal action, the ROW/TUP, that Level 3 is requesting from the BLM is consistent with land use planning guidelines and requirements from local, state and federal agencies with jurisdiction on the Level 3 route through eastern Oregon. Copies of permits and clearances issued to Level 3 for its fiber optic network installation project have been provided to BLM to document project authorization on non-BLM lands.

1.7 SCOPING, PUBLIC INVOLVEMENT, AND ISSUES IDENTIFIED

1.7.1 Scoping Process

Scoping for this project began on March 23, 1999 with the publishing of the scoping notice in five newspapers and the mailing of scoping notices. The newspapers in which the scoping notice was published were *The Seattle Post-Intelligencer, The Seattle Times, The Wenatchee World, The Baker City Herald* and *The Observer* (La Grande). The BLM and USFS sent scoping letters describing the proposed action to individuals, groups and agencies who may have an interest in the Level 3 project. The mailing included a project description, a map of the route, and a comment sheet to be sent back to the BLM Baker Resource Area and the Wenatchee National Forest (due to the agency's earlier involvement in the NEPA process). Rather than attempt to differentiate scoping comments pertaining only to BLM lands in eastern Oregon, all issues raised during the scoping comment have been addressed in this EA.

As the original lead federal agency, the Forest Service initiated Government-to-Government consultation with Indian Tribes in the project area. Scoping letters were provided to the Burns Paiute Tribe, the Confederated Tribes of Warm Springs, the Yakama Indian Nation, the Nez Perce Tribe, the Confederated Tribes of the Umatilla Indian Reservation, the Snoqualmie Tribe, and the Tulalip Tribe. Information was also shared with the Muckleshoot Tribe by the Forest Service at the tribe's request.

1.7.2 Issues Identified

The scoping period ended on July 27, 1999. The BLM and USFS received thirty letters in response to the scoping process, which raised the following issues:

- Is the proposed project compatible with federal, state, and local management plans and land use regulations, and what permits will be required?
- How much of the project is on existing rights-of-way?
- How much disturbance to vegetative communities will be caused by the proposed project?
- Will the proposed project increase the spread of noxious weeds?
- Will the project cause an increase in toxic contamination of soils, surface waters, and groundwater?
- Will there be an increase development of roadless, wilderness or other protected natural areas?

1.7.3 Public Involvement

Public involvement for this EA will include a 30-day comment period. The EA will be distributed to federal, state, local agencies, interested American Indian tribal governments, and individuals and groups who expressed an interest in receiving a copy. The Executive Summary, EA, Finding of No Significant Impact (FONSI) and maps showing greater detail of the proposed route are available for inspection or distribution in the Baker Field Office (3165 Tenth Street) and Vale District Office (100 Oregon Street) of the Bureau of Land Management, and at the Baker County Library. A public notice letter with copies of the EA Executive Summary, the FONSI, and a route vicinity map will be mailed to other groups and people identified during the scoping process. Public notices will be published in *The Baker City Herald, The Observer* (La Grande), *Argus Observer* (Ontario), and *The Malheur Enterprise*. After the comment period closes, comments will be reviewed. The BLM will issue a decision following its implementation procedures. The BLM has a 30-day appeal period after the issuance of their decision.

2 ALTERNATIVES

The goals in finding a suitable route from Issaquah to Boise include running adjacent to existing utility rights-of-way where possible and avoiding environmentally sensitive areas (including cultural resources). In some areas, compromises needed to be made. For example, in order to avoid an environmentally sensitive area, a route in an area of less or no previous disturbance may have been chosen. Primary routes include locating adjacent to railroad, road, pipeline and transmission line ROWs.

No BLM lands in Washington or Idaho are crossed by the proposed or alternative routes by Level 3 to build a link between Issaquah and Boise. In eastern Oregon, however, BLM lands are unavoidable due to checkerboard land ownership patterns and the location of Level 3's previously constructed network.

The key objective in determining the proposed route alternative is to reduce adverse impacts by route location and construction of the network on BLM lands. This chapter presents the various alternatives that were evaluated in choosing the proposed linear route that crosses BLM lands. Attachment II of the EA includes maps that show how the proposed route crosses or avoids each parcel.

2.1 ALTERNATIVE 1 – PROPOSED ACTION

The proposed action to establish a fiber optic network ROW on BLM lands includes identifying a proposed route location and implementing mitigation measures during installation and post-construction. In this section, the proposed route is described first. Then, mitigation measures are detailed. These mitigation measures specifically apply to Level 3's construction activities that will occur on BLM lands as part of the proposed action. Similar mitigation measures were used to minimize direct, indirect and cumulative impacts resulting from Level 3's construction on other lands in eastern Oregon.

2.1.1 Proposed Route

In Union, Baker and Malheur counties, the Level 3 route is typically located adjacent to road and railroad ROWs and other utility ROWs (Williams Northwest natural gas pipeline, the Chevron Oil pipeline, and the WorldCom fiber optic network). Private property easements and federal land ROW were obtained to establish a new 10-foot ROW plus additional construction workspace width adjacent to existing utilities or in some cases run "cross-country" (not adjacent to existing ROWs) in order to create a contiguous, linear network. The route, as it crosses twenty BLM parcels in eastern Oregon, is described in further detail below.

The Level 3 Issaquah to Boise route parallels the Williams pipeline in northern Union County. The first BLM managed land encountered (from west to east) is Parcel 1 in

the Blue Mountains. The route across this parcel will run directly west of the Williams pipeline ROW. Prior to the issuance of a BLM ROW grant or a TUP to Level 3, unauthorized construction began on this parcel (also referred to as California Gulch). Work ceased immediately upon identifying the boundaries and ownership of the parcel prior to the conduit installation being completed. The BLM was notified of this unauthorized construction and coordination with the agency was initiated to assess impacts and develop a restoration plan. The Plan of Development, which is being prepared for the BLM, details specific restoration activities that address impacts from previous construction and provides guidelines to complete network installation on this parcel (see Chapter 4). No further construction or restoration has or will occur until all permits and clearances are issued, including the ROW and TUP as part of the proposed action.

BLM lands are not crossed again until just south of Baker City. The proposed route enters and exits Parcel 3 by paralleling the west side of the Williams pipeline ROW. After proceeding in a southeasterly direction adjacent to the pipeline and road ROWs, the route crosses Parcel 4. The Chevron pipeline ROW is paralleled to the southwest by the route through this parcel.

Just southeast of Pleasant Valley, within BLM Parcel 5, the route runs adjacent to the southern boundary of the WorldCom fiber optic ROW until it intersects with the Old Highway 30 ROW. At this point, the route is located adjacent to the northeast portion of the highway ROW. Shortly thereafter, the route is adjacent to Old Highway 30 ROW as it runs through Parcel 6. The conduit will be located within the road prism of Old Highway 30 on this parcel. The route continues on Old Highway 30 until just south of Nelson where it crosses the Union Pacific Railroad tracks and runs in the shoulder of Cement Plant Road, a county road. The route is situated on the west side of this county road through Parcel 7. In Parcel 8, the route lies adjacent to the west side of Rye Valley Road and then turns onto the southwest edge of a private driveway. After these parcels, the route again runs parallel to the pipeline ROW and crosses I-84.

Just east of the Interstate crossing, a corner of BLM Parcel 10 is traversed by running adjacent to the northern edge of the Williams pipeline ROW. To the south after the route crosses Sisley Creek, it proceeds onto BLM Parcel 11 within the disturbed area of an existing dirt road. The proposed route across this parcel follows the existing dirt road for part of the distance and runs parallel to the northern edge of the Williams pipeline ROW in other areas. Another option to traverse Parcel 11, which was considered but eliminated, was to locate the fiber optic ROW directly adjacent to the existing pipeline ROW for the entire distance across the parcel. Environmental impacts would have been greater on this option since the pipeline takes a direct path crossing six drainages. Therefore, to reduce impacts to riparian vegetation in these drainages, the alignment was partially routed onto an existing dirt road. Both the proposed route and the alternative considered but eliminated are shown in Figure 2.

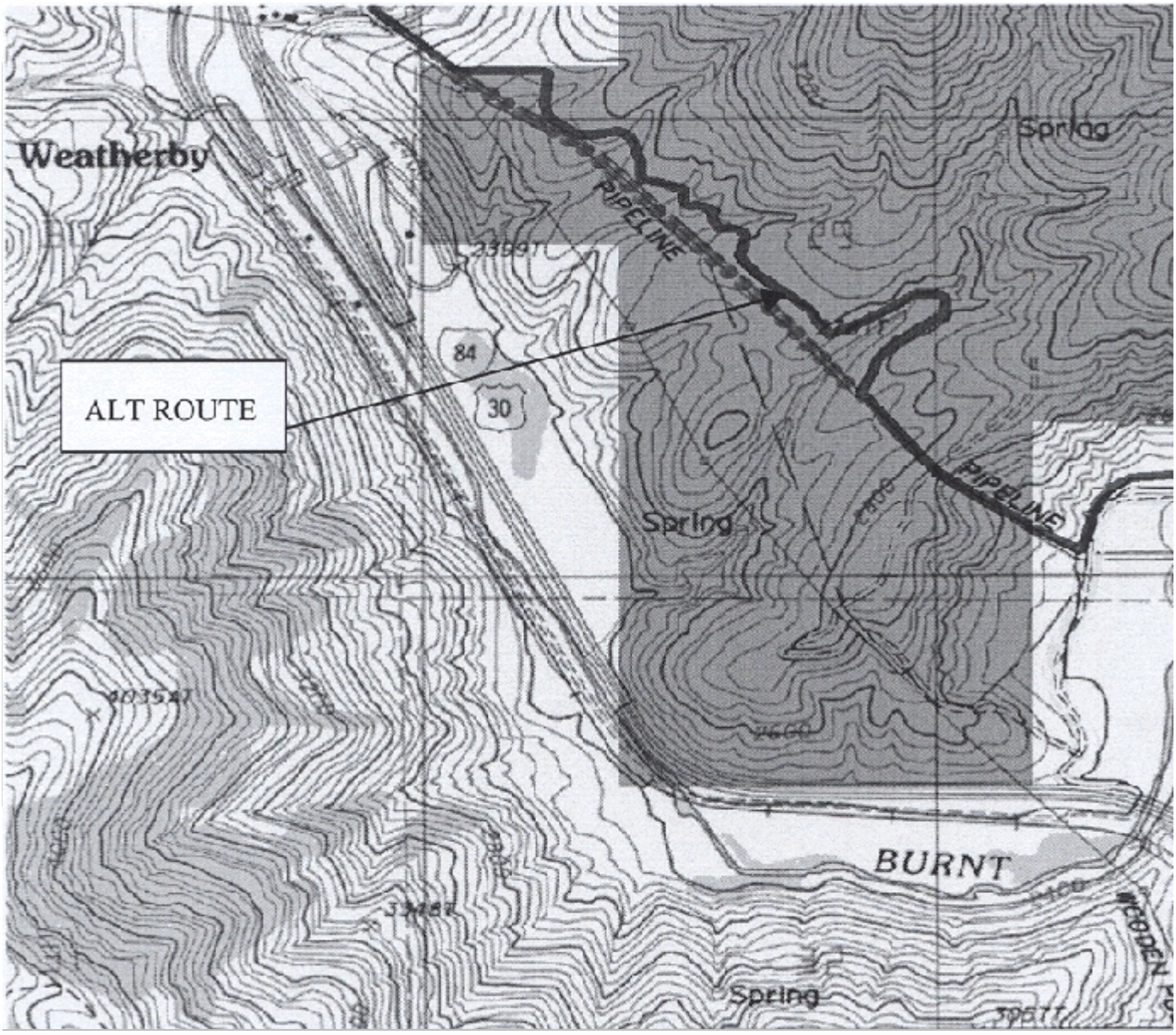

Figure 2. Lime BLM Parcel 11 Option

After exiting Parcel 11, the route lies adjacent to existing pipeline and road ROWs to run east and south around the Burnt River bend. As the route crosses BLM Parcel 12, it is adjacent to a dirt road and then parallels the west edge of the Chevron pipeline ROW.

South of Dixie, the route crosses BLM Parcel 13 while running adjacent to the east side of the Chevron pipeline ROW. After seven miles of the route continuing to the southeast on private properties and public road ROWs, BLM Parcel 15 is crossed. On this parcel, the route is located adjacent to the east side of the Old Highway 30.

Northwest of Huntington the route switches from being adjacent to the pipeline to being adjacent to the north side of the Old Highway 30, where it clips BLM Parcel 16. Next, the route enters and exits BLM Parcel 17 running adjacent to the west side of the WorldCom fiber optic ROW.

At the Baker/Malheur County line, the route switches to the south side of I-84 where it crosses a corner of BLM Parcel 18 while paralleling the southwest edge of the WorldCom fiber optic ROW. Continuing southeast, the route crosses WorldCom and Williams pipeline ROWs to enter BLM Parcel 19. Through this parcel, the route stays adjacent to the east side of the Williams pipeline ROW.

Shortly after exiting Parcel 19, the route enters BLM Parcel 20 and is aligned adjacent to the west side of the WorldCom fiber optic ROW. The route exits this parcel and continues for approximately five miles until it traverses BLM Parcel 21. This route through this parcel again lies adjacent to the western edge of the WorldCom fiber optic ROW.

South of Moores Hollow, the route crosses BLM Parcel 22 and runs adjacent to the west side of the WorldCom ROW. The last BLM land crossed, Parcel 23, is near Jacobsen Gulch. On this parcel, the route crosses WorldCom and Williams ROWs to parallel a dirt road. The network will be placed in the dirt road, but additional temporary workspace will be adjacent to the road. No more BLM parcels are encountered from this point to Boise, the end of this Level 3 City Pair segment.

2.1.2 Geology and Soils Mitigation

1. In areas that are subject to landslides, rockfalls, and slumping, the engineered design will include construction methods and techniques that will not increase the chance of slope failure and will protect conduits in the event of slope failure. The objectives for reclamation efforts will emphasize:

    - Soil stabilization through the establishment of ground cover; and
    - Erosion and sediment controls to avoid substantial soil loss and displacement.

2. Appropriate engineering controls will be implemented when excavating, trenching, or grading is conducted on soils with moderate- to high-mass wasting potential.

3. Vegetation will be protected and retained to the fullest extent possible.

4. Disturbed areas, including bore pits, will be recontoured and revegetated with a native seed mix suitable for the altitude and soil moistures. Seeding and mulching will enhance revegetation of the disturbed areas.

5. Site restoration will be completed concurrently with conduit installation or during the appropriate season for seeding and planting. All cable debris, construction

spoils, excess installation materials, and miscellaneous litter will be removed for proper off-site disposal.

6. Erosion control measures, such as certified Oregon weed seed free straw bales, filter fences, and waterbars, will be installed to trap soils and sediments from runoff to the fullest extent possible. An Erosion Control Plan has been completed and approved by ODEQ.

7. Surface reclamation will involve the clearing and grading of construction debris from ROW to leave the soil in the proper condition for planting per approval of the authorized BLM officer. On slopes, surface flow will be diverted by waterbars to a stabilized outlet using runoff diversions with a 2 percent outslope directed toward appropriate energy-dissipating structures. Woody material (such as low shrubs) will be stored within TUP workspaces and will be placed back on the ROW with topsoil to provide a seed source and organic matter.

8. Topsoil saving practices will be employed, which include:

    a. When using trenching and bedrock construction methods, as well as establishing bore pits, topsoil will be excavated separately from subsoil. Topsoil will be saved by placing it within the ROW.

    b. The conduit will be installed in an appropriate bedding material, which includes suitable material originally removed from the trench. Subsoil will be replaced in the trench or the reclaimed bore pit followed by the saved topsoil. Saved topsoil will also be spread evenly over the areas to be reclaimed.

    c. If additional suitable growing media are needed, it will come from local providers and will be free of rocks, boulders, cobbles, gravel, and noxious weeds.

    d. Following replacement, topsoil will be stabilized against wind erosion by the use of mulches and/or biodegradable (BLM authorized matting) erosion control fabric.

    e. No topsoil saving measures are required with conventional or spider plowing since the plow blade creates a furrow, rather than an open trench, without disrupting the layers of topsoil and subsoil.

9. Excess exposed rock will be either left on site or removed from BLM land and disposed at an appropriate facility per approval of the authorized BLM officer.

10. Construction activities will cease during wet weather conditions when ruts in excess of four inches are created by construction equipment. An authorized BLM official will be contacted to authorize restarting construction based on site soil types, slope, and applicable erosion control practices. Construction activities will not be allowed to reroute around areas.

11. Documentation (written and photographic) of pre- and post-construction conditions will be maintained by construction monitors and will be provided to the BLM within 30 days of completion of construction.

2.1.3 Wetland and Stream Crossings Mitigation

Forest- and shrub-dominated (high and medium value) wetlands will be avoided by using directional boring or by routing the cable away from these features. The cable will be installed either by plowing or trenching through low-value wetlands. All perennial and intermittent streams on BLM managed lands will crossed by directional boring. These activities will be designed to mitigate impacts and will be in compliance with the conditions of the BLM Right-of-Way Grant and Temporary Use Permit, US Army Corps of Engineers Nationwide 12 Permit, and Oregon Department of State Lands Removal-Fill Permit.

1. No vegetation removal will occur within the RHCAs or 100-year floodplains as specified in the Pacfish/Infish/Screens Information Guide. The 100-year floodplain boundaries will be delineated prior to construction.

2. No in-water work will occur. The conduits will either be directionally bored under streams or placed over or under the top of culverts unless otherwise approved by an authorized BLM officer. This method will reduce impacts to those species of aquatic life indigenous to the waterbody. However, five drainages (ephemeral and intermittent) on BLM Parcel 11 will be plowed or trenched, rather than directionally bored, with approval by BLM and DSL. This exception was granted due to the Level 3 ROW being located on an existing dirt road which crosses the drainages at a point of previous disturbance, rather than crossing these drainages where riparian vegetation would have been impacted to a greater degree. Construction activities within the RHCAs of the five drainages on Parcel 11 will not occur until after May 1, 2000. Plowing or trenching between May 1 and July 1, 2000 will require authorization from the BLM.

3. To avoid damage to soil structure during wet weather conditions, construction activities will cease when ruts in excess of four inches are created by construction equipment. An authorized BLM official will be contacted to authorize restarting construction based on site soil types, slope, and applicable erosion control practices. Construction activities will not be allowed to reroute around areas.

4. Hydrological monitors or fish biologists will be onsite for construction compliance. Monitors will have the authority to stop construction at any time to protect environmental features and to ensure regulatory compliance. A BLM authorized officer will approve continuation or direction of construction after a stop order. Monitors' credentials will be approved by an authorized BLM officer. Weekly monitoring reports will be provided to the BLM by a Level 3 representative.

5. Documentation (written and photographic) of pre- and post-construction conditions will be maintained by construction monitors and will be provided to the BLM within 30 days of completion of construction.

6. BLM will be notified at least 72 hours in advance of bore operations and staging area use. Bore plans will be approved by BLM prior to these operations commencing.

7. Directional bore staging areas and access routes will be located no closer to wetlands or streams than the 100-year floodplain boundary, which will be delineated onsite prior to construction commencing. Silt fencing will contain bore pit spoils and prevent siltation of adjacent RHCAs. No refueling, equipment repair or lubricating will occur within the 100-year floodplain boundaries. Proper spill containment materials will be used to isolate those activities in order to minimize the risk of potential spills. BLM will be notified within 48 hours of any spill.

8. Directional boring operations will adhere to the following mitigation if seeping or "frac-out" occurs (approximately one out of eight bores may have this occurrence):

    a. Containment and cleanup equipment will be present for use at the site, as needed;

    b. Portable pumps will be kept on site to control seepage to the surface and to prevent the drilling fluid from entering streams, creeks or wetlands;

    c. A qualified hydrological monitor or fish biologist will be present at all bore sites to monitor construction activities. The stream will be carefully watched to ensure prompt detection of any releases;

    d. If a release occurs, work will cease and BLM, Oregon Division of State Lands and Oregon Department of Fish and Wildlife will be notified within 48 hours;

    e. Releases will be immediately controlled and the drilling fluid will be contained and removed;

    f. A remediation plan will be developed and based on the site-specific conditions. Work will restart with BLM authorization of the remediation plan; and

    g. Upon completion of a directional bore, all slurry is removed from the construction site and deposited at an approved site.

9. All high and medium value wetlands will be directionally bored and no woody vegetation will be cleared or removed from any wetland. Wetlands that are plowed or trenched will be planted with a BLM specified riparian seed mix.

10. For low value wetlands that are plowed or trenched, wetland contours will be restored to original conditions to prevent any damming of water flow across the wetland. If the original contours were irregular (e.g., hummocks), the restoration will not provide an unnatural watercourse that causes the area to dewater, thereby disrupting the natural wetland hydrology.

    a. Silt fences will be installed outside RHCAs on either side of the wetland work path to contain the trench spoil piles and prevent siltation of adjacent wetland areas.

    b. The top layer of low value wetland soils will be separated from the underlying subsoil during excavation and be replaced in the original layering after cable installation.

    c. Trench plugs (sacks of soil placed from the bottom of the trench to the natural ground surface) will be installed at either end of the wetland installation as necessary to mitigate potential runoff into or from the wetlands and to prevent the trench and bedding material from acting as a subsurface drain.

    d. Drainage patterns (channels) across the wetland will be reestablished as close to the original locations and contours as possible.

11. The Erosion Control Plan approved by Oregon Department of Environmental Quality will be employed to minimize sedimentation. All grading will be performed in accordance with the standards outlined in the plan.

12. All handholes will be located outside of RHCAs.

13. Construction activities and permanent placement of the conduit, fiber optic cable and handholes will not increase flood heights or flood inundation boundaries within floodplains.

14. All materials such as the conduit, fiber optic cable and handholes will be buried, and thus anchored to prevent floatation, collapse or lateral movement of the structure. Conduits and cables are flood-proofed, and handholes allow for adequate drainage to avoid floatation.

2.1.4 Vegetation Mitigation

1. Seed mix recommendations approved by the BLM will be developed according to general soil conditions that are represented within each of the vegetation types crossed by the route. Suggested techniques for seeding, mulching, and erosion control will be applied to the route according to soil and topographic conditions.

2. No fertilizers will be used on BLM lands.

3. In woody areas, the trees and shrubs that cannot be avoided by construction activities will be cut flush with the surface. These shrubs and trees will be left whole and placed back within the ROW during recontouring.

4. Topsoil saving practices will be employed, which include:

    a. When using trenching and bedrock construction methods, as well as establishing bore pits, topsoil will be excavated separately from subsoil. Topsoil will be saved within the ROW.

    b. The conduit will be installed in an appropriate bedding material, which includes suitable material originally removed from the trench. Subsoil will be replaced in the trench or the reclaimed bore pit followed with the saved topsoil. Saved topsoil will also be spread evenly over the areas to be reclaimed.

    c. If additional suitable growing media are needed, it will come from local providers and will be free of rocks, boulders, cobbles, gravel, and weed seed.

    d. Following replacement, topsoil will be stabilized against wind erosion by the use of mulches and/or biodegradable erosion control fabric.

    e. No topsoil saving measures are required with conventional or spider plowing since the plow blade creates a furrow, rather than an open trench, without disrupting the layers of topsoil and subsoil.

6. Botanical monitors will be onsite for construction compliance (refer to POD for specific monitoring requirements per BLM parcel). Monitors will have the authority to stop construction at any time to protect environmental features and to ensure regulatory compliance. A BLM authorized officer will approve continuation or direction of construction after a stop order. The monitors' credentials will be approved by an Authorized BLM Officer. A Level 3 representative will provide weekly monitoring reports to the BLM.

2.1.5 Noxious Weeds Mitigation

Level 3 and the construction contractor will take the following measures on BLM lands to minimize the risk of noxious weed spread.

1. The BLM will be contacted to discuss specific noxious weed concerns and required practices.

2. The BLM will be consulted to determine appropriate seed mixes for revegetation. Native species will be used unless directed otherwise by an authorized BLM officer. Disturbed areas will be revegetated with certified Oregon weed seed free seed mixes.

3. A noxious weed baseline survey will be conducted prior to construction on each BLM parcel.

4. All equipment and vehicles will be steam cleaned or washed prior to mobilizing equipment to BLM lands and prior to exiting a noxious weed site. Dirt and grease will be removed to minimize noxious weed seeds from adhering to vehicles and being transported into or off a site. The BLM may inspect equipment to determine it has been adequately cleaned. Equipment that fails inspection will be immediately cleaned to inspection standards before entering or exiting BLM lands.

5. Methods to contain and dispose of wastewater from equipment cleaning will be coordinated with and approved by an authorized BLM official.

6. Ground disturbance will be limited to the greatest extent possible. The construction contractor will avoid scraping or blading vegetation whenever possible by following vegetation clearing methods identified in section 2.1.4.

7. The construction contractor will not transport any contaminated soils onto BLM lands.

8. Seed and mulch applied for erosion control and restoration purposes will be certified Oregon weed seed free.

9. Level 3 will subcontract the surveying, monitoring and treatment of noxious weeds, which includes the following:

    a. Pedestrian weed inventory and monitoring will be conducted annually on BLM lands and non-BLM lands in Union, Baker and Malheur Counties for 5 years after construction is complete to determine whether noxious weeds have invaded areas disturbed by construction.

    b. If post-construction monitoring identifies any locations of noxious weed infestations greater than the established baseline conditions on BLM lands, a noxious weed control plan will be developed for BLM lands and other adjacent lands indicating similar weed infestations from the Level 3 project. This plan will be developed in consultation with BLM and respective counties within 30 days.

    c. Level 3 and/or its subcontractor will coordinate treatment plans with the BLM and respective counties.

    d. The noxious weed control plan will use the best available information to treat and remove noxious vegetation. This plan will use control methods identified in the Vale District 5 year Integrated Weed Control Plan and Environmental

Assessment/Decision Record (June 1999).[1] Chemical treatment with BLM approved substances will be the primary method of noxious weed eradication. However, in consultation with the BLM and respective counties, other methods such as using biological agents, mechanical treatments (blading, tilling or mowing), or manual treatments (hoeing, pulling, chopping, or digging) may be used in conjunction with chemical treatments.

2.1.6 Site Stabilization Mitigation

Stabilization and reclamation of areas disturbed by construction activities will occur during and after construction is complete. Disturbed areas, including bore pits, will be recontoured to original conditions. Structural erosion controls will be implemented within three days in those areas where construction activities have temporarily or permanently ceased. Structural erosion controls will be left in place until revegetation has stabilized the area, with the exception of water bars that will remain in place permanently. Temporary erosion control measures such as certified Oregon weed seed free straw bales, silt fences and water bars, will be installed to trap soils and sediments from runoff to the fullest extent possible. Woody material will be left whole and placed back on the right-of-way. Salvaged topsoil will be spread evenly over all areas to be reclaimed. Following replacement, topsoil will be stabilized by use of mulches, and/or erosion control fabric to control wind erosion. The following structural erosion controls may be used, depending on site conditions and amount of disturbance:

1. Biodegradable geotextile fabric will be used in areas of steep slopes that are adjacent to sensitive areas such as streams or wetlands. The purpose of the fabric is to stabilize soil upon which vegetation can be established. The selected geotextile fabric must decompose within 3 to 5 years. The geotextile fabric will be placed just below the expected final grade, backfilled with site soils (all topsoil will be reserved onsite and replaced), and seeded.

2. At the direction of the wetland/botanist/hydrologist/fish biologist monitor, silt fencing will be installed at the lower edge of active construction areas. Based on the amount of disturbed area, silt fencing will be used only in steep areas and along RHCA or 100-year floodplain boundaries immediately adjacent to streams, rivers and significant wetlands. Silt fencing will also be used at storm drain inlets and other stormwater discharge points to limit the amount of sediment in the discharge, as well as at bore sites. Silt fences will be in 36-inch continuous rolls, and staked every six feet with a two-inch by two-inch by five-foot stake driven 2.5 feet deep. The bottom 12 inches of silt fence will be set into a 12-inch deep by eight-inch trench and backfilled on the uphill side. In all areas where silt fences will be installed they will be mapped, inspected and maintained until vegetative

[1] Bureau of Land Management. Vale District 5-year Integrated Weed Control Plan and Environmental Assessment/Decision Record. June 1999.

cover has stabilized the disturbed areas. Documentation (written and photographic) of pre- and post-construction conditions will be maintained by construction monitors and will be provided to the BLM within 30 days of construction project completion.

3. Once vegetation is adequately re-established as approved by BLM, the fencing shall be removed. All fencing material (e.g. stakes, 36-inch fence material and hay bales) will be carefully removed to ensure that newly established vegetation remains undisturbed. Any sediment accumulated behind the silt fences will also be removed if determined to be necessary by an authorized BLM officer.

4. Anchored certified Oregon weed seed free straw bales will be used to reduce flow velocity and sediment transport in long drainage runs, around culverts, and in other areas where silt fencing alone is not sufficient.

5. Waterbars will be constructed with site-excavated materials and will consist of a mound of soil and/or rock one foot high by two feet wide, placed so that the flow of water will be intercepted and redirected away from the construction area. The flow line at the front toe of the mound will have a slope of one to five percent. The waterbars will extend the full width of the disturbed area and will direct water into an undisturbed area. Waterbars will be used where the longitudinal slope is sufficient to create fast moving runoff down the disturbed right-of-way (generally, five percent slope or greater).

Erosion and sediment controls will be placed so that the substantial loss and displacement of soil will be avoided. In places where the conduit will be trenched to expose culverts, it will be encased in a metal sleeve on both sides of the culvert to anchor it to the road in case the culvert fails. Shoring retaining walls or other appropriate engineering controls will be implemented when excavating, trenching, or grading is conducted on soils with moderate to high mass wasting potential.

2.1.7 Site Revegetation Mitigation

Revegetation of disturbed areas on BLM land will be implemented in late fall or early winter for the species proposed. Site restoration will be completed concurrently with fiber optic cable installation. The following methods will be used to revegetate disturbed areas.

- All disturbed areas will be seeded with the appropriate mixture suitable for the location, such as those listed below. The seed mixes listed in this section are suggested mixes that include native species that may or may not be available when Level 3 implements revegetation mitigation. Native seed availability depends on annual seed collection yields; thus, exact species included in the mix and proportions of species that comprise the mix are not precisely known until native seeds have been collected (Howell, personal comm., 2000). To avoid using seed from non-local seed sources, Level 3 will procure seed mixes that are obtained from local sources and are as similar to the species mixes listed below as

possible. BLM approval and authorization of specific seed mixes and species proportions within the seed mixes will be obtained prior to revegetation implementation. The seed mixture will be planted in the amounts specified in pounds of pure live seed (PLS)/acre. There will be no primary or secondary noxious weed seed in the seed mixture. The seeding will be done in the fall and be repeated until a satisfactory stand is established as determined by the authorized BLM officer.

Baker County Seed Mix	**20 pounds per acre**
Purple Wildrye, *Elymus glaucus*	1 lbs/ac
Silky Lupine, *Lupinus caudatus*	2 lbs/ac
Secar Snake River Wheatgrass, *Elymus lanceolatus wawawai*	1 lbs/ac
Idaho fescue, *Festuca idahoensis*	6 lbs/ac
Sherman Big Bluegrass, *Poa ampla*	6 lbs/ac
Sandberg Bluegrass, *Poa secunda*	1 lbs/ac
Magnar Basin Wild Rye, *Leymus cinereus*	3 lbs/ac

Burnt River/Farewell Bend Seed Mix	**20 pounds per acre**
Blue Wildrye, *Elymus glaucus*	2 lbs/ac
Silky Lupine, *Lupinus caudatus*	2 lbs/ac
Secar Snake River Wheatgrass, *Elymus lanceolatus wawawai*	5 lbs/ac
Idaho fescue, *Festuca idahoensis*	5 lbs/ac
Sandberg Bluegrass, *Poa secunda*	4 lbs/ac
Magnar Basin Wild Rye, *Leymus cinereus*	2 lbs/ac

Timbered Sites Seed Mix	**19 pounds per acre**
Pinegrass, *Calamagrosis rubescens*	5 lbs/ac
Sabin's Lupin, *Lupinus sabinii*	3 lbs/ac
Mountain brome, *Bromus carinatus*	7 lbs/ac
Blue Wildrye, *Elymus glaucus*	4 lbs/ac

Riparian Seed Mix	**17.75 pounds per acre**
Blue Wildrye, *Elymus glaucus*	10 lbs/ac
Giant Wildrye, *Elymus cinereus*	7 lbs/ac
Carex nebraskensis	¼ lbs/ac
Carex rostrata	¼ lbs/ac
Juncus balticus	¼ lbs/ac

- Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop to the bottom of the drill and are planted first). Where drilling is not possible, seed will be broadcast and the area will be raked or chained to cover the

seed. When broadcasting seed, the pounds per acre will be doubled, and the seed will be raked in.

- All seed will be certified Oregon weed seed free. Level 3 will provide BLM with advance notice and inspection of tagged sealed seed two weeks before seeding commences.

Seeding will take place in late fall or early winter. Most of the right-of-way will be seeded using a drill. In dryer sites, two options for seeding have been identified: 1) certified Oregon weed seed free straw will be placed over cast seeds and then lightly disked or 2) sites will be hydromulched. After seeding has occurred, the sites will be monitored annually during the appropriate season for vegetation recovery assessment. A report with photo-documentation will be prepared and provided to BLM based on the annual monitoring results. Additional seeding, based on annual monitoring, will occur in areas where satisfactory revegetation has not occurred.

2.1.8 Wildlife Mitigation

Mitigating disturbance to wildlife builds upon previous mitigation identified in Sections 2.1.2 through 2.1.7. The following mitigation measures are identified as critical:

1. Control soil erosion in sensitive habitat by using silt fences and certified Oregon weed seed free straw bales.

2. Boring under high and medium value wetlands and streams will be done to eliminate impacts to RHCAs and riparian vegetation.

3. No in-water work will occur during construction.

4. Replanting with native vegetation will be completed to enhance wildlife habitat, cover, and food source for species using the area.

5. A noxious weed baseline condition will be completed prior to construction occurring on BLM property and monitoring will be conducted annually on BLM lands and non-BLM lands for 5 years after construction is complete to determine whether noxious weeds have increased from the established weed baseline. If monitoring identifies any locations of noxious weed infestations greater than the baseline conditions on BLM lands, a noxious weed control plan will be developed for BLM lands and other adjacent lands indicating similar weed infestations from the Level 3 project.

6. Clearing of vegetation (e.g. sagebrush) will be limited to the extent necessary for safely maneuvering construction equipment. Clearing, trimming or pruning will be done in a manner that creates irregular patterns across the landscape to minimize abrupt edges to wildlife cover.

7. Any trenches or bore pits left open overnight will be covered or fenced.

8. Prior to construction, a survey to identify ferruginous hawk nests within one-half mile (line of sight) of the ROW/TUP workspaces will be completed. The survey will be conducted by a wildlife biologist whose credentials will be approved by the BLM. Prior to the survey commencing, the wildlife biologist will consult with the BLM to determine parcels that may support suitable habitat to the ferruginous hawk. Survey results will be reported to the BLM. If any nests are identified within one-half mile of the ROW/TUP, Level 3 will coordinate with the BLM to develop appropriate mitigation to avoid adverse effects to the species.

9. Areas that have been identified by BLM as sage grouse lekking grounds will be avoided. Lek grounds are usually open areas such as meadows and areas with low sage brush. A wildlife biologist will be onsite to monitor construction on BLM parcels that may support suitable lek grounds (Parcels 3, 4, 13, 17, 19, 20, 21 and 22) to ensure that construction complies with assurances specified in the POD. An Authorized BLM Officer will approve the monitors' credentials. A Level 3 representative will provide weekly monitoring reports to the BLM.

2.1.9 Cultural Resources Mitigation

1. An Accidental Find Policy will be implemented if previously undiscovered archaeological resources are identified during excavation, boring, or other construction or maintenance activities on federal land. The plan will be implemented through the following steps should an accidental find on federal lands occur during construction:

    a. Construction activities in the immediate area of the accidental find will be halted. ("Immediate area" is a context-specific measure. However, roughly 30 to 50 feet will probably be adequate in most cases, although special attention should be given to the possible extension of a new find beyond this buffer zone.)

    b. The contractor will notify its cultural resources consultant on the project who will, in conjunction with the contractor, notify the responsible federal official for the lands involved (e.g., Area Manager for BLM) within 24 hours of the find. It is the responsibility of the federal agency to consult with the SHPO and/or Advisory Council to satisfy Section 106 requirements. The federal official will provide direction to the contractor or cultural resources consultant for further work or protection in the case of archaeological discoveries.

    c. In the event of a discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony on federal lands, all the work within the immediate area must cease, and the discovery must be protected in place. Samples may not be collected from burials, nor may burials be removed or disturbed in any way, without prior authorization from the federal official.

d. In the event of an inadvertent discovery of human remains, Level 3 will comply with the stipulated notification and protection measures implementing the Native American Graves Protection and Repatriation Act (NAGPRA). BLM will be immediately notified, the discovery area will be secured, and operations in the project area will cease until otherwise notified by the authorized BLM officer.

e. If a cultural resource is discovered during the course of monitoring or construction, the resource will be evaluated for its eligibility to the NRHP. If the resource cannot be avoided, a mitigation plan will be developed before work will proceed.

f. All costs associated with monitoring, protection, evaluation for Section 106 compliance, development of a mitigation plan, or mitigation of inadvertent discoveries of cultural resources or graves will be borne by the applicant/right-of-way holder.

2. Cultural resource monitors (e.g., archaeological, paleontological) will be onsite for construction compliance on all BLM parcels with pre-identified cultural resources including all parcels crossed by the Oregon Trail (refer to POD for specific monitoring requirements per BLM parcel). Monitors will have the authority to stop construction at any time to protect cultural resources features and to ensure regulatory compliance. A BLM authorized officer will approve continuation or direction of construction after a stop order. The monitors' credentials will be approved by an authorized BLM officer. A Level 3 representative will provide weekly monitoring reports to the BLM.

3. Cultural resource monitors will be onsite during all directional bore operations.

4. On parcels that are designated or proposed Areas of Critical Environmental Concern (ACECs), revegetation on disturbed construction areas will use appropriate seed mix that is consistent with the site's visual aesthetics and that has been approved by an authorized BLM officer.

5. Two-track dirt roads on BLM lands used for construction access purposes and all TUP areas have been surveyed for cultural resources.

6. If significant or potentially significant cultural resources are discovered during the course of finishing uncompleted surveys, NHPA Section 106 clearance will be obtained prior to construction commencing on the respective site.

2.1.10 Visual Resources Mitigation

Strong and moderate visual contrasts caused by construction disturbance will be reduced by:

1. Removal, saving, and replacement of topsoil (refer to topsoil saving measures in soil mitigation section);

2. "Feathering" edges of vegetation clearing to reduce straight line or sharp contrasts;

3. Random distribution of removed vegetation on the construction ROW following construction to disguise areas and provide a natural seed source for reclamation;

4. Revegetation of all areas disturbed by construction activities;

5. After surface reclamation, random distribution of rocks, boulders, and vegetation debris (removed during trenching operations) over disturbed areas will protect hill slopes and reduce erosion potential;

6. Marker posts painted an environmentally blending color as approved by an authorized BLM officer;

7. On parcels that are designated or proposed Areas of Critical Environmental Concern (ACECs), revegetation on disturbed construction areas will use appropriate seed mix that is consistent with the site's visual aesthetics and that has been approved by an authorized BLM officer.

2.1.11 Air Quality Mitigation

Watering or other appropriate dust-abatement measures will control fugitive dust generated during construction. Vehicles and equipment used during construction will be properly maintained to minimize exhaust emissions.

2.1.12 Hazardous Materials Mitigation

1. The POD contains a Spill Prevention and Contingency Plan that outlines BMPs that will be followed by construction crews.

2. Each piece of equipment will contain a fully supplied spill kit. Personnel will be trained in its use.

3. All spills will be reported to an authorized BLM officer.

2.1.13 Fire Control Mitigation

1. The POD outlines specific fire prevention measures to prevent and suppress fire. These measures specify individual responsibilities for project personnel and equipment requirements for each vehicle.

2. No burning of debris resulting from construction clearing will be allowed at the construction site. Debris will be removed to an approved disposal site.

Project personnel will be in communication with the BLM Fire Management Officer to determine and appropriately respond to the Fire Precaution Levels, fire closures, and other restrictions.

2.2 ALTERNATIVE 2 – NO ACTION

The Telecommunications Act of 1996 directed the telecommunication market be more open in order to provide users with competitive products and prices. Level 3 is one service provider building a nationwide fiber optic network to increase telecommunication infrastructure capacity and diversity.

Under the no action alternative, the proposed line will not be built and no impacts on the environment will result. However, this project's purpose to establish a new diverse fiber optic network will not be met. More specifically, Level 3 will be unable to build a continuous linear network between Issaquah and Boise. The BLM lands create gaps in this linear alignment, which in turn prevent the network from becoming operational. The purpose of increasing telecommunication provider capacity and diversity, thus, is not attainable.

2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

2.3.1 Interstate 84 Right-of-Way

Level 3 initiated conversations with the Oregon Department of Transportation (ODOT) to install of the fiber optics cable into the ROW of I-84. ODOT has verbally denied Level 3 this request because I-84 is a limited access interstate. The American Association of State Highway and Transportation Officials (AASHTO) has published "A Policy on the Accommodation of Utilities within Freeway ROW" (AASHTO 1995), which sets forth criteria for installing new utilities along freeways. The policy states:

> *New utilities would not be permitted to be installed longitudinally within the control access lines of any freeway, except that in special cases such installations may be permitted under strictly controlled conditions. However, in each case the utility owner must show that:*
>
> *A. The accommodations would not adversely affect the safety, design, construction, operation, maintenance or stability of the freeway;*
> *B. The accommodation would not be constructed or serviced by direct access from the through traffic roadways or connecting ramps;*

C. The accommodation would not interfere with or impair the present use or future expansion of the freeway; and

D. Any alternative location would be contrary to the public interest. This determination would include an evaluation of the direct and indirect environmental and economic effects which would result from the disapproval of the use of such ROW for the accommodation of such utility. (p 3).

ODOT's policy is to have all utility crossings comply with the current AASHTO policy on interstates. The installations that may be allowed on freeways are generally limited to crossings only, with all of the installation work and maintenance activities performed outside of the access control line. Without permission from ODOT to use the I-84 ROW, Level 3 pursued other alternate locations to install the fiber optic network.

2.3.2 Burnt River Canyon–Westside Alignment

One alternative considered earlier in the project design located the Level 3 route on the westside of the Burnt River Canyon (Figure 3). This alternative was eliminated due to Level 3 requiring a continuous linear route to build the network. Private property easements must be granted from private property owners in order for the route to be continuous. This alternative was eliminated due to the inability to secure permission from all landowners along this alignment.

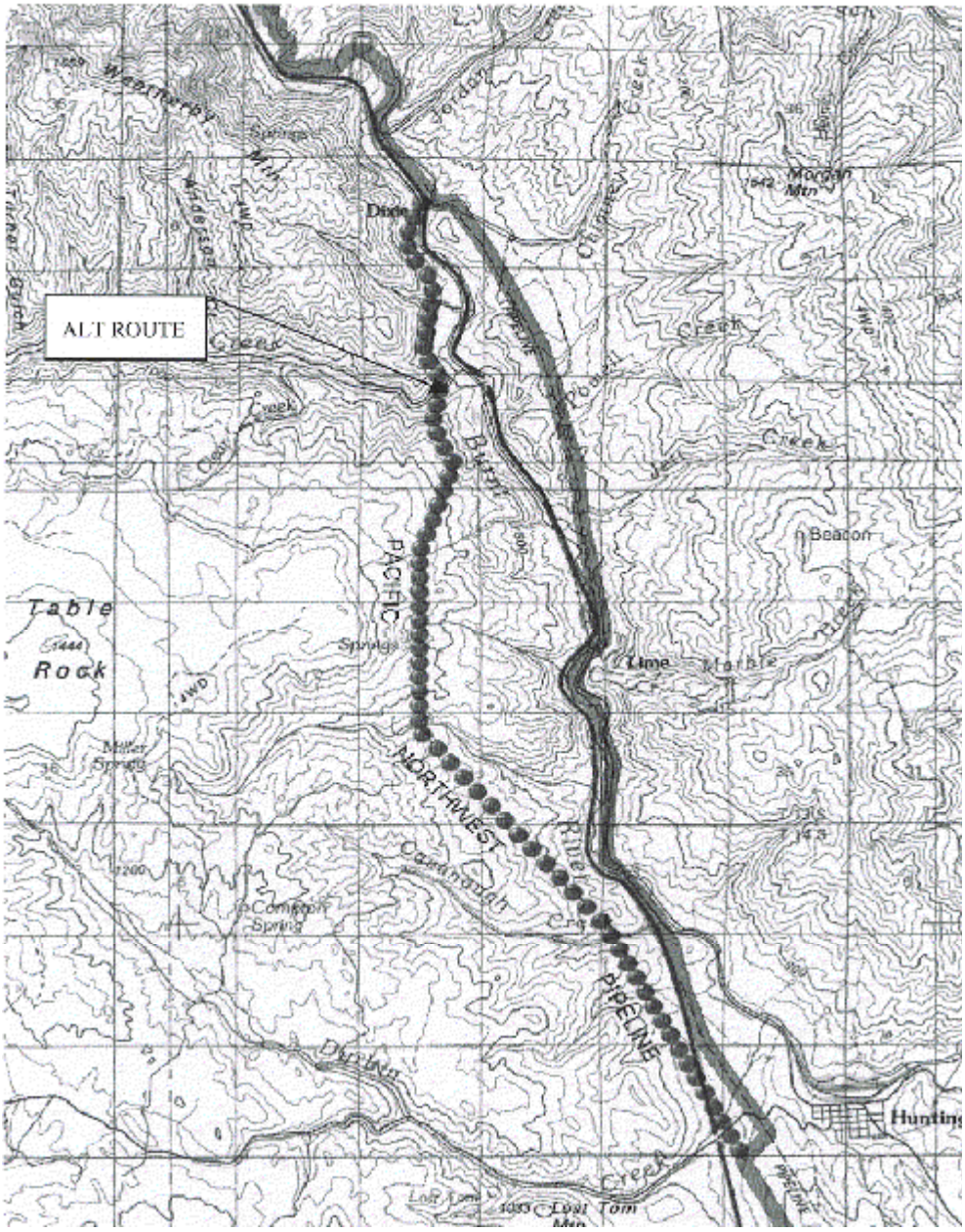

Figure 3. Burnt River Canyon – Westside Alignment Alternative

3 AFFECTED ENVIRONMENT

Chapter 3 presents the existing condition of the potentially affected environment. The affected environment discussion summarizes the information from federal and state agency databases, reports, and telephone calls; site visits; and other sources. Sections in this chapter focus on the main geographic and topical issues of concern. Maps of the proposed route are in Attachment II.

As described earlier in this EA, the Level 3 project on non-BLM lands between Issaquah, Washington and Boise, Idaho has been constructed or is currently under construction. The entire city pair is approximately 536 miles in length, and construction on non-BLM lands has been permitted by the various federal, state and local entities having jurisdiction and permit authority (refer to Section 1.5).

While this EA focuses on the impacts of the proposed project on BLM-administered lands, it also takes into account the connectivity of the route and any impacts the line would have on resources on BLM lands, whether the impacts resulted from Level 3's actions on federal or non-federal lands. Therefore, the affected environment described in this chapter includes existing conditions within the proposed 10-foot-wide ROW and the additional, temporary construction workspaces on BLM lands (see Table 2 in Chapter 1 and Appendix B), and the existing conditions outside BLM lands that may affect resources on BLM lands or be affected by construction on BLM lands. (For example, species habitat is described for areas outside BLM lands that may potentially be affected by the project.)

The twenty BLM parcels (9.8 linear miles) that would be crossed by the proposed route are non-contiguous parcels located in Union, Baker and Malheur counties, Oregon. The general study area described in this chapter encompasses approximately 147 miles from the northern border of Union County through Baker and Malheur County to the Oregon/Idaho state line.

Outside of BLM lands, Level 3 has constructed or is constructing its fiber optic network as authorized by the applicable jurisdictions and agencies. The equipment, facilities, and methods used for this construction are the same as those described in Chapter 1 for the proposed action on BLM lands. Restoration activities and mitigation measures described for the proposed action (Chapter 2) are the same or similar to those used on non-BLM lands, except where other jurisdictions and private landowners had their own site-specific requirements or conditions. For example, the following mitigation has been implemented on non-BLM lands: erosion control measures to stabilize disturbed soils; regrading to reestablish original ground contours; revegetation with native species to provide long term recovery of the ROW (unless otherwise directed by the landowner); directional boring of most streams and all medium- and high-value wetlands to avoid direct disturbance to water resources; limited 12-foot wide disturbance areas when plowing or trenching low-value wetlands; immediate containment protocols for frac-outs during directional boring;

noxious weed preventative, monitoring and treatment plans; avoidance of all NRHP eligible or potentially eligible cultural resources; onsite monitoring of water resource construction; and annual monitoring and reporting of water resource restoration.

Approximately 80 percent of the linear distance of the ROW is plowed or directionally bored. In cases where the route runs cross-country, typical construction included grading of the ROW first and sidecasting topsoil downslope. Trenching is used more often along public road ROWs due to the concentration of other utilities, which excludes plowing methods in order to avoid damaging other utility lines. Trenching is also used in areas where surface rock, subsurface boulders, and bedrock prohibit the use of a plow. In these cases, topsoil is typically shallow or not present. On non-BLM lands, in general, topsoil was not saved, so some topsoil loss has occurred.

Monitoring for revegetation success on non-BLM lands is determined by the applicable jursidiction or landowner. Performance bonds and private easement agreements provide stipulations for Level 3 to achieve pre-construction or other acceptable conditions on recovery of disturbed areas, including revegetation, as a result of construction activities.

BLM Parcel 14 was avoided by the proposed route. Construction activities were required to avoid impacting a perennial stream at a point that is upstream from this parcel. The stream will be directionally bored on adjacent private lands. The same applicable mitigation (e.g., erosion control, topsoil saving for bore pit excavation, frac-out response protocol) as proposed for BLM lands construction will apply to this directional bore operation. The remote location of this stream and limited access to the ROW required a temporary bridge be placed across the stream to mobilize conventional plow construction equipment from one side to the other. The placement of this temporary bridge was authorized by an Oregon Department of Fish and Wildlife agent on behalf of ODSL to comply with the conditions of the state issued Removal-Fill Permit.

In Union, Baker and Malheur counties, the Level 3 route is typically located adjacent to road and railroad ROWs and other utility ROWs (Williams Northwest natural gas pipeline, the Chevron Oil pipeline, and the WorldCom fiber optic network). Private property easements and federal (non-BLM) ROW were obtained to establish a new 10-foot-wide ROW plus additional construction workspace width adjacent to existing utilities or, in some cases, to run “cross-country” (not adjacent to existing ROWs) in order to create a contiguous, linear network.

All BLM parcels that would be crossed by the proposed route are located in Baker and Malheur counties, except Parcel 1 (referred to as California Gulch) which is located in Union County. Prior to the issuance of a BLM ROW grant or a TUP to Level 3, unauthorized construction began on Parcel 1. The width of disturbance through the stream on this parcel was 60 feet. Work ceased immediately upon identifying the boundaries and ownership of the parcel prior to the conduit installation being completed. The BLM was notified of this unauthorized construction and

coordination with the agency was initiated to assess impacts and develop a restoration plan. The Plan of Development, which is being prepared for the BLM, details specific restoration activities that address impacts from previous construction and provides guidelines to complete network installation on this parcel. No further construction or restoration has or will occur until all permits and clearances are issued, including the ROW and TUP by BLM.

3.1 GEOLOGY, GEOMORPHOLOGY, AND SOILS

The proposed route crosses two physiographic provinces in eastern Oregon: the Blue Mountains and the northern most section of the Owyhee Uplands bordering the Snake River (Franklin & Dyrness 1973). The Blue Mountain Province consists of a complex of mountains, canyons, ridges, and valleys formed by Permian, Triassic, and Jurassic rock covered by lacustrine deposits of the late Mesozoic or Cretaceous period, gentle folding of the crust, volcanism, and finally Pleistocene glaciation. The Blue Mountains are comprised mainly of Paleozoic formations and Columbia River basalt. Following the deposition of the most recent lava flows, a layer of aerially-deposited volcanic ash and fine pumice has covered much of the area. Subsequent erosion has removed considerable amounts from southern slopes. However, other locations are typically mantled by the material. Additionally, loess deposits have mantled many eastern upland areas (Franklin & Dyrness 1973). Slopes adjacent to the proposed route vary from flat to 80% along portions near Ladd Canyon.

The soils of northeastern Oregon are grouped into units dependent upon elevation. At moderate to high elevations, the soils are dominated by fine sandy loam to silt loam. At lower elevations, the western Blue Mountain soils are generally a clay loam, while eastern soils tend to be silt loam and clay loam (Franklin & Dyrness 1973).

3.2 HYDROLOGY, WATER QUALITY, STREAMS AND WETLANDS

Oregon water quality regulations are organized on a geographical basis, with different sets of water quality criteria specifically defined for each drainage basin. The proposed route crosses the upper Grande Ronde River basin north of La Grande. The route runs through the Powder River basin when it is adjacent to Highway 30, then enters the lower basin of the Burnt River, and crosses the river, continuing downstream to the Snake River.

Oregon water quality regulations set chronic and acute criteria for numerous toxic compounds. In addition, the regulations set criteria separately for various drainage basins (ODEQ 1990). Along the proposed route, specific water quality standards and beneficial use categories have been set for the Grande Ronde, Powder, Burnt, and Snake River basins.

All streams and wetlands located within the affected environment are shown on the maps in Attachment II, and are listed in Table 6. Areas considered as jurisdictional

wetlands are based on the definitions provided by the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987). This is the federally accepted method for determining jurisdictional wetlands. Riparian areas on non-federal lands were determined according to the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979).

Wetland functions and values assessed during the field inventory were according to the *Oregon Freshwater Wetland Assessment Methodology* (Roth et al., 1993). This assessment methodology includes a general wetland characterization, a wetland of special interest for protection category, and a sensitivity-to-impacts and enhancement-potential section. An inter-agency group wrote this methodology and field-tested it in Clatsop, Linn, Benton, and Deschutes counties, and the Portland metropolitan area before publishing. ODSL and the Corps have accepted this methodology that is used for assessing wetland functions and values. Both ODSL and the Corps have regulatory jurisdiction over wetlands in the State of Oregon.

Most of the proposed route is adjacent to a preexisting area of disturbance. Many of the wetland and riparian areas have been altered by past disturbance related to the construction and maintenance of these facilities. Portions of the wetlands that occur within the ROWs typically have been ditched or cleared, and the existing vegetation has low species diversity.

Table 6. Wetlands and Water Resources Delineated on BLM Parcels

Reference	Parcel	Wetland Type	Stream Type	Proposed Construction Method
OR1	1		Intermittent	Directional bore
OR2	5		Perennial	Directional bore
OR3	6	Emergent		Plow
OR4	6		Intermittent	Plow over culvert
OR5	7	Scrub-Shrub		Plow
OR6	11	Emergent	Intermittent	Plow along road
OR7	11		Intermittent	Plow along road
OR8	11		Ephemeral	Plow along road
OR9	11		Intermittent	Plow along road
OR10	11		Intermittent	Plow along road
OR11	13	Scrub-Shrub	Intermittent	Directional bore
OR12	19		Reservoir	Directional bore
OR13	20		Intermittent	Directional bore
OR14	20		Intermittent	Directional bore

At Parcel 1 (California Gulch), partial construction has occurred. Work ceased immediately upon identifying the boundaries and ownership of the parcel prior to conduit installation being completed. The BLM was notified of this unauthorized construction and coordination with the agency was initiated to assess impacts and develop a restoration plan. Existing impacts associated with this construction include: a 60-foot wide disturbance area to the RHCA of the intermittent stream, soil compaction in the RHCA, damage to stream banks, disturbance and loss of riparian vegetation, increase in stream turbidity and sedimentation, additional rock heaved to the ground surface, and loss of topsoil. The POD details specific restoration for this parcel and Chapter 4 assesses residual impacts (after mitigation is implemented) that is expected as a result of this construction.

3.3 FISHERIES

The affected environment includes several major watersheds. These include: the Grande Ronde River, Powder River, Burnt River and Snake River basins. The watercourses crossed by the proposed route support habitat for a number of fish species including salmon, steelhead, trout, warmwater game fish, and non-game fish. Some streams along the route do not support fish or provide low-quality fish habitat, but they do contribute to the water quality of fish-bearing waters downstream.

3.3.1 Fish Habitats and Utilization

Grande Ronde River Basin

The proposed route enters the Grande Ronde River Basin at the crest of the Blue Mountains near Kamela, Oregon. One parcel of BLM managed land with an intermittent stream is crossed by the proposed route.

Spring Chinook, steelhead and bull trout are all present in the Grande Ronde River and its tributaries. Near the proposed crossing, all three species may be present at any given time, using the area primarily as a migration corridor (Zakel, 1999). Steelhead move upstream through this area to spawn from February through April, followed by Chinook moving through in May and June. Steelhead spawning habitat is present. Juvenile Chinook move downstream through this area from mid-spring through October, and may reside in suitable habitats for longer periods (Zakel, 1999). Chinook and steelhead exist in Rock Creek, and possibly Sheep Creek, but most likely are not present in the other creeks crossed by the proposed route. Bull trout may be present in parts of all the creeks crossed in this basin. Interior redband trout, a state sensitive species, are also present in the streams crossed by the proposed route.

Powder River Basin

The proposed route enters the Powder River Basin at the top of Ladd Canyon, adjacent to I-84, and exits the basin near Pleasant Valley. Within this basin, the

proposed route passes through two parcels of BLM land, which do not have any stream crossings within the affected environment.

Since the construction of the Hells Canyon Dam, anadromous fish have not been present in the Powder River Basin. There are naturally occurring populations of bull trout, especially in headwater streams such as Wolf Creek, Big Muddy Creek, Anthony Creek and others (Zakel, 1999). These fish generally reside in the smaller headwater streams, but some (particularly juveniles) move into the mainstem of the Powder River to overwinter. Redband trout, a state sensitive species, are present throughout the system.

Burnt River Basin

The proposed route enters the Burnt River Basin near Pleasant Valley and leaves the basin near Huntington. The proposed route passes through several parcels of BLM land, some of which are adjacent to the Burnt River or have tributaries within the parcels.

Like the Powder River Basin, anadromous fish have been blocked to the Burnt River Basin by the Hells Canyon Dam. The Burnt River, and its tributaries, contain redband trout and may contain bull trout (Zakel, 1999).

Snake River Basin

The proposed route enters the Snake River Basin near Huntington. Several parcels of BLM managed land are crossed by the proposed route within this basin.

The Snake River Basin, above the Hells Canyon Dam, does not contain anadromous fish. Warmwater and introduced species, such as bass, squawfish and suckers, are present (Zakel, 1999). Redband trout is present in the Snake River and Malheur River and in streams with suitable spawning and rearing habitat.

3.3.2 Federal Threatened and Endangered Fish Species/Stocks

The proposed route through eastern Oregon passes through several areas that support populations of fish listed as either threatened or endangered. For anadromous fish, individual stocks are listed rather than an entire species. A stock is a reproductively isolated population within a species, usually defined by river basins. Four federally listed anadromous species occur within the proposed route area. They include the Snake River Spring/Summer Chinook, Snake River Fall Chinook, Mid-Columbia steelhead trout, and Snake River Basin steelhead trout. Additionally, bull trout are a federally listed species.

Snake River Spring/Summer Chinook

Snake River Spring/Summer Chinook were listed as threatened in April 1992. Snake River Spring/Summer Chinook adults enter the mouth of the Columbia River during

the natural high-water flow season from March to May (Myers et. al., 1998). Spawning occurs in August and September in relatively small headwater streams of the Snake River tributaries. Juveniles typically remain for a year in these headwater streams, then migrate downstream to the ocean.

Water diversion and hydroelectric and flood control dams have prevented this species from accessing much of its former habitat. In many of those areas still remaining, spawning and rearing habitat has been significantly degraded due to human activities and natural resource extraction. Downstream migration of juveniles is significantly impacted by slowed river flows caused by the dams. Slowed downstream migration disrupts smoltification, and increases exposure to predators. Hazards encountered at dams include physical trauma, injury from gas-saturated spillway water, and increased predation from birds and predatory fish.

These fish may occur along the proposed route in the tributaries to the Grande Ronde River and Snake River below Hell's Canyon Dam.

Snake River Fall Chinook

Snake River Fall Chinook were listed as threatened in April 1992. Adults enter the mouth of the Columbia River in July or August and spawn in larger tributaries or the mainstem of the Snake River in November and December (Myers et. al., 1998). Unlike the Spring/Summer Chinook, juveniles typically begin their downstream migration within weeks or months of hatching. Hazards to this stock are similar to those of the Snake River Spring/Summer Chinook.

These fish may occur along the proposed route in the Lower Grande Ronde River and Snake River below Hell's Canyon Dam.

Mid-Columbia River Steelhead Trout

Major rivers along the proposed route in eastern Oregon known to contain Mid-Columbia River steelhead trout include the Umatilla and Columbia Rivers. Steelhead trout will spawn in many perennial tributaries to these rivers crossed by the proposed route. Depending on the time of year, Mid-Columbia River steelhead trout can occur in the Columbia River, which is crossed by the proposed route. This run of steelhead trout is likely to occur in numerous perennial streams that do not have fish passage barriers along their length and contain suitable habitat.

Snake River Basin Steelhead Trout

This inland steelhead occupies the Snake River Basin of northeast Oregon and was listed as threatened in August 1997. This run of steelhead trout is likely to occur in numerous perennial streams that do not have fish passage barriers along their length and contain suitable habitat. Snake River Basin Steelhead are, also, summer run steelhead, as well as the other runs mentioned above. They comprise two groups, the A- and the B-runs, based on migration timing, ocean-age, and adult size (Busby, et. al., 1996). Snake River Basin steelhead enter fresh water from June to October and

spawn during the following spring from March to May. They usually remain in freshwater for two to three years. A-run steelhead usually spend one year in the ocean, while B-run steelhead generally spend two years in the ocean.

These steelhead, like the other species listed here, suffer from a number of limiting factors. These factors include the over-harvesting by recreational fisheries; the loss and/or degradation of habitat from dams, irrigation, agriculture, and logging; urbanization and other human activities; and predation from sea mammals and predatory fish (Busby, et. al., 1996). In addition, a loss of genetic variability from hatchery stocking programs have possibly resulted in the loss of resistance to natural environmental fluctuations, such as drought or poor ocean conditions. The proposed route crosses the Grande Ronde River and Snake River basins, which may contain Snake River Basin steelhead.

Bull Trout

In June 1998, the USFWS listed bull trout as threatened. A bull trout population occupies the Columbia River Basin, including the mainstem and all of the tributaries, to the US–Canada border. Bull trout are a freshwater species requiring cold, clean waters. Bull trout often live in lakes as adults, but migrate to tributary streams for spawning and rearing. Spawning typically occurs in fall, and juveniles will often remain in the streams for three or more years. In some streams with no connections to lakes, bull trout will live in the deepest pool habitat.

Threats to bull trout include habitat modifications caused by timber harvest and associated road development, livestock grazing, mining, dams, hydroelectric development, and irrigation diversions (USDA Forest Service, 1994). Introduction of exotic species has impacted bull trout populations through competition, juvenile predation, and hybridization. Activities that alter channel stability, substrate composition, cover, and water temperature may also cause impacts to bull trout.

Bull trout have been found in the Grande Ronde River basin along the proposed route. The potential exists for finding bull trout in several other perennial streams along the preferred route, although none have been found to date. Bull trout may occur in the mainstem of the Burnt River and Snake River and associated perennial tributaries that provide suitable habitat along the proposed route.

3.3.3 BLM Sensitive Species/Stocks

The Interior Columbia Basin Ecosystem Management Plan (ICBEMP), sponsored by the BLM and the USFS, lists all of the interior Columbia Basin stocks of Chinook salmon, rainbow trout and steelhead, bull trout, and westslope cutthroat trout as key salmonids (USFS and BLM 1997). The scientific assessment for the ICBEMP also lists a number of species found in streams along the proposed route as narrow endemic and special-status fish species. These are listed in Table 7.

Table 7. Sensitive Fish in the ICBEMP Project Area

Common Name	Species
Malheur mottled sculpin	*Cottus bairdii* ssp.
Pit sculpin	*Cottus pitensis*
Slender sculpin	*Cottus tenuis*
Margined sculpin	*Cottus marginatus*
Westslope cutthroat trout	*Oncorhynchus clarki lewisi*
Interior redband trout	*Oncorhynchus mykiss* ssp.
Catlow Valley redband trout	*Oncorhynchus mykiss* ssp.
Goose Lake redband trout	*Oncorhynchus mykiss* ssp.
Warner Valley redband trout	*Oncorhynchus mykiss* ssp
Spring/summer chinook salmon	*Oncorhynchus tshawyscha*
Coho salmon	*Oncorhynchus kisutch* ssp.
Oregon tui chub	*Gila bicolor oregonensis*
Sheldon tui chub	*Gila bicolor eurysoma*
Catlow tui chub	*Gila bicolor* ssp.
Summer basin tui chub	*Gila bicolor* ssp.
Goose Lake sucker	*Catostomus occidentalis lacusanerinus*
Klamath large-scale sucker	*Catostomus synderi*
Jenny Creek sucker	*Catostomus rimiculus* ssp.
Miller Lake lamprey	*Lampetra minima*
Pacific lamprey	*Lampetra tridentata*
Goose Lake lamprey	*Lapetra tridentata* ssp.
Pit roach	*Lavinia symmetricus mitrulus*
Olympic mudminnow	*Novumbra hubbsi*

Source: (USFS and BLM, 1997)

3.4 VEGETATION

This section presents information about botanical resources and plant communities existing along the proposed route. This section also discusses the following botanical resources that are considered important by the BLM, and other state and federal agencies that manage natural resources because of their sensitive habitat features or uniqueness in the region: threatened and endangered plant species and BLM sensitive plant species.

The proposed route traverses two broad vegetation zones that generally correspond to physiographic provinces (Franklin & Dyrness 1973). The Blue Mountains zone is characterized as a coniferous forest zone and the Great Basin is described as a shrub-steppe and steppe zone.

In shrub-steppe and steppe zones, as well as forested areas of the Blue Mountains, black cottonwood, white alder, willows, basin wildrye, chokecherry, rose, redosier dogwood, mockorange, sedges and rushes, and hackberry are common in the riparian areas. Black locust and white cottonwood are also encountered in some riparian areas. Common species include black hawthorn, basin wildrye, cattails, reed canarygrass, and teasel.

Human alterations to the landscape have modified native habitat within each vegetation zone, particularly in the shrub-steppe and steppe regions where vast areas have been converted to agriculture or used as rangelands. Such modifications are prevalent in the immediate vicinity of the proposed route. In addition, the proposed route is commonly characterized by opportunistic, weedy, or agricultural species as opposed to typical zonal vegetation. Route specific vegetation is described below in addition to the generalized information for each vegetation zone.

The proposed route passes through coniferous forests of the Blue Mountains. This portion of the route traverses *Abies grandis* and *Pseudotsuga menziesii* zones. Variations in soil depth, elevation, and precipitation in the Blue Mountains create a variety of habitats from semiarid bunchgrass prairies, through pine and fir forests, to true alpine communities at the highest elevations. There are two major plant associates of mixed conifer forests in this area: ponderosa pine, sometimes with Douglas-fir, lodgepole pine, or other conifers and perennial grasses that occur at the lower elevations; and grand fir with ponderosa pine, Douglas-fir, and western larch that occur at higher elevations. The grand fir association is the most extensive mid-slope forest in eastern Oregon (Franklin & Dyrness 1973). In the Grande Ronde and Baker valleys and lower portions of the Burnt River, the proposed route encounters wet meadows and other mesic vegetation.

As the proposed route continues southeast from the Blue Mountains into the northern Great Basin, it loses elevation and enters shrub-steppe and steppe communities. Much of the land along the proposed route has been converted to agriculture and rangeland. In relatively undisturbed sections of the route, typical species encountered include big sagebrush, rabbitbrush, bitterbrush, bluebunch wheatgrass, Idaho fescue, and Sandberg's bluegrass. In areas bordered by agriculture, agricultural species dominate along the proposed route.

3.4.1 Threatened and Endangered Plant Species

Preliminary background data has been obtained through written requests for data searches on locations of any known, or rare, plant species from all agencies maintaining jurisdiction over lands crossed by the proposed route. These include written responses, data, and maps from the following agencies:

- US Fish and Wildlife Service (USFWS);
- Bureau of Land Management (BLM); and

- Oregon Natural Heritage Program (ONHP).

A pedestrian, botanical field survey has been conducted for this proposed fiber optic project. The surveyors used ATVs to drive the proposed route in order to verify the alignment and identify suitable habitat for listed species. Suitable habitat was then pedestrian surveyed to document plant presence. The pedestrian survey was conducted when plants were in bloom and identifiable.

The BLM has stated that Howell's thelypody (*Thelypodium howellii* ssp. *spectabilis),* listed as threatened, could occur in the vicinity of the proposed project. Its habitat has been in river valleys and moist alkaline plains, and in greasewood and rabbit-brush plant communities between Clover Creek/I-84 interchange and the south side of Baker City. There is one known population of this species near the Haines Rodeo Grounds (ONHP, 2000); however, no Howell's thelypody plants or habitat were identified along the proposed route on BLM lands.

3.4.2 BLM Sensitive Plant Species

In addition to plants listed as threatened or endangered under the Endangered Species Act (ESA), the BLM maintains a list of sensitive species for which population viability is a concern. Two BLM sensitive plant species naturally occurring in the vicinity of the proposed route are Snake River goldenweed (*Haplopappus radiatus*) and Malheur forgetmenot or Cronquist's stickseed (*Hackelia cronquistii*). Table 8 shows documented BLM sensitive plant populations that are within one mile of the proposed route on BLM and non-BLM lands. If either of the sensitive plant species are within one mile of the proposed route on BLM lands, the particular parcel is indicated in the table. Both plant species have the federal status "species of concern."

The BLM Baker Resource Area RMP directs the agency to "maintain and protect population localities of *Haplopappus*" (p. 19, BLM, 1989). No *Haplopappus* communities were identified along the proposed route that crossed BLM lands. This sensitive species is present within Parcel 14, which the proposed route avoided (Table 9). Nine small *Haplopappus* populations were also identified on private lands from Dixie south to Bragg Creek. Construction through these populations destroyed between 500 and 600 *Haplopappus* plants. In addition, *Haplopappus* populations were present on a three-quarter mile route segment (adjacent to Parcel 14) through which construction has already occurred. No survey work was done on this three-quarter mile segment, so plant numbers are not available (HDR, 1999). In all probability, 1,000 *Haplopappus* plants were eliminated on private lands.

Table 8. Known Sensitive Plant Locations

Sensitive Plant	EO Code Number	Location	Within one mile of BLM Parcel
Haplopappus radiatus	PDASTDTOGO*029	Big Lookout Mountain	Yes, Parcel 11
H. radiatus	PDASTDTOGO*019	Big Lookout Mountain	Yes, Parcel 11
H. radiatus	PDASTDTOGO*052	North of Dixie	Yes, Parcel 12
H. radiatus	PDASTDTOGO*007	Jordan Creek	No
H. radiatus	PDASTDTOGO*003	Chimney Creek	Yes, Parcel 13
H. radiatus	PDASTDTOGO*002	Powell Creek	Yes, Parcel 14
H. radiatus	PDASTDTOGO*024	Dixie Creek	No
H. radiatus	PDASTDTOGO*043	Pipeline Spring	No
H. radiatus	PDASTDTOGO*044	NW pipeline west of Lime	No
H. radiatus	PDASTDTOGO*011	Rodman Creek	No
H. radiatus	PDASTDTOGO*012	North of Lime	No
H. radiatus	PDASTDTOGO*009	Northwest of Lime	No
H. radiatus	PDASTDTOGO*031	Hilltop crest	No
H. radiatus	PDASTDTOGO*032	Near Overhead Flat Spring	Yes, Parcel 15
H. radiatus	PDASTDTOGO*034	Huntington	No
H. radiatus	PDASTDTOGO*037	Burnt River	No
H. radiatus	PDASTDTOGO*015	Cemetery S of Huntington	No
Hackelia cronquistii	PDBOROGO80*035	Moores Hollow	No
H. cronquistii	PDBOROGO80*034	North Fork Jacobsen Gulch	No
H. cronquistii	PDBOROGO80*038	Jacobsen Gulch	No
H. cronquistii	PDBOROGO80*036	Butterfield Springs	No
H. cronquistii	PDBOROGO80*037	South Fork Jacobsen Gulch	No

Source: ONHP database query, 2000.

Table 9. Sensitive Plant Survey

Sensitive Plant	Location	Colony Size
Haplopappus radiatus	13S-44E-15	2
H. radiatus	13S-44E-15	600+
H. radiatus	13S-44E-15	150+
H. radiatus	13S-44E-15	600+
H. radiatus	13S-44E-22	300+
H. radiatus	13S-44E-22	140+
H. radiatus	13S-44E-22	20
H. radiatus	13S-44E-22	50

Source: HDR, 1999.

3.5 NOXIOUS WEEDS

Exotic (non-native) plants are often early successional, pioneer species that are successful at colonizing disturbed areas. They typically produce large quantities of easily dispersible seeds that establish quickly and grow to out-compete native species for water, nutrients and other resources. Some exotic plants, in particular many noxious weeds, can become established without soil disturbance. Once introduced into an area, these species can invade intact vegetative cover and displace native plants.

Noxious weeds easily invade farmland, decrease forest productivity and alter ecosystems by out-competing native vegetation. Commonly in the form of annual and perennial forbs, noxious weeds are difficult to control by cultural or chemical practice. They typically establish on bare ground, degraded and disturbed sites, and can be dispersed through ground disturbing activities where seeds are transported by earth moving equipment or in reseeding mixes.

Disturbed areas such as road and utility rights-of-way often harbor exotic plant species including noxious weeds. Since the proposed fiber optic cable installation will occur adjacent to previously disturbed areas, noxious weeds may be present along portions of the route. This in turn increases the potential for noxious weeds to be dispersed from existing disturbance areas (roads and utility ROWs) to newly disturbed areas (the Level 3 ROW).

Since the proposed action on BLM lands is a noncontiguous set of parcels across Union, Baker and Malheur Counties, various local, state and federal agencies have jurisdiction for noxious weed control practices across the Level 3 project. The State of Oregon directs individual landowners, counties, the state and the federal government to cooperate to control and eradicate noxious weeds (ORS 570.505). With respect to public lands and rights-of-way, the following mandate applies:

> *The State Highway Commission, the respective county courts, reclamation districts and municipalities shall destroy or prevent the spread or seeding of any noxious weed within the meaning of ORS 570.515 to 570.600 on any land owned by them or constituting the right of way for any highway, county road, drainage or irrigation ditch, power or transmission line, or other purposes under their respective jurisdictions (ORS 570.535).*

Due to the linear nature of the fiber optic network project, Level 3 has a series of compliance requirements as the network traverses lands under various jurisdictions. As previously described in Chapter 1, Level 3 is required to comply with Union and Baker County noxious weed stipulations as part of land use approvals granted for the project. For Union County, the noxious weed condition of approval attached to the conditional use permit include:

- A weed control management plan will be prepared which includes customary implementation measures and is approved by the Union County Weed Control Officer.

A copy of the Union County Conditional Use Permit, Noxious Weed Management Plan, and signed approval of this Plan by the Union County Weed Control Officer is included in the *Permits and Clearances* document that was provided to the BLM (Parsons Brinckerhoff, 2000).

For Baker County, noxious weed conditions of approval attached to the conditional use permit include:

- Project contractors would be required to steam clean their equipment prior to entering Baker County and after working in a noxious weed site.

- Project contractors would be required to broadcast an approved mix of certified weed seed free grass seed along the disturbed route prior to compacting the soil.

- Project contractors would be required to post a bond to cover the five-year costs of monitoring, inventorying and controlling noxious weeds along the cable route through Baker County.

A copy of the Baker County Conditional Use Permit and performance bond issued to the county is included in the *Permits and Clearances* document that was provided to the BLM (Parsons Brinckerhoff, 2000).

No specific noxious weed management practices were required by Malheur County.

Level 3 will comply with the conditions of these permits, which includes any necessary corrective actions. This compliance in conjunction with the noxious weed mitigation measures detailed in Chapter 2 as part of the proposed action on BLM lands is consistent with the cooperation among county, state and federal agencies mandated by the Oregon Revised Statutes to control noxious weed spread (ORS 570.505 - 570.600).

The Baker County Weed District and BLM Vale District have been contacted to obtain information for target weed species lists for Union, Baker, and Malheur Counties. The Oregon Department of Agriculture (ODA) defines “A” designated weeds as weeds of known economic importance that occur in small enough infestations to make eradication/containment possible. “A” designated weeds also could be those that are or not known to occur, but their presence in adjacent counties makes future occurrence seem imminent. “B” designated weeds are of known economic importance, and are locally abundant, but of limited distribution in other counties. “C” designated weeds are of economic importance, are abundant county wide, and are in adjacent counties.

Prior to construction commencing on BLM parcels, the proposed 30-foot wide construction disturbance zone and all additional temporary construction workspaces will be surveyed for ODA Target List “A”, “B” and “C” designated weeds. These surveys will establish a baseline weed inventory. Preliminary survey results and ODA “A” and “B” weed species lists are presented in Appendix CB. Prior to construction commencing on BLM parcels, the baseline weed inventory will be completed and results will be submitted to the BLM.

Level 3’s previous project construction activities on non-BLM lands may have contributed to noxious weed spread. A temporary site (located south of Baker City) used for equipment and office staging was a known major diffuse knapweed population area. Diffuse knapweed seed is easily spread by wind and movement of

soil. These seeds may have adhered to and been transported by construction equipment staged out of this yard.

Originally, this site was leveled and rock was placed on parking and staging areas prior to the placement of office trailers and equipment. No noxious weed pre-inspection occurred, which would have identified this site as a known site with diffuse knapweed present. For approximately three months, this site was used for equipment staging while constructing the fiber optic network in Baker and Malheur Counties. Equipment staged at this yard consisted of several backhoes, pickup trucks, conduit reels, handholes, maintenance facilities, and other miscellaneous supplies. Most construction equipment, such as bulldozers, reel trucks, trackhoes, rocksaws, graders, and directional bore drills were never staged at this site; this equipment is mobilized to and from actual construction areas.

Once this problematic issue was known, the site was abandoned and new equipment and office staging sites were procured. By the time of relocating from this site, most non-BLM parts of the route in Baker County had been constructed.

Level 3 moved its equipment staging area to a site near Huntington at the end of December 1999. This involved the following steps:

- A pre-inspection was done with the Baker County Weed Inspector. Consultation with Malheur County was also conducted. No noxious weeds were present.
- The equipment site was cleared using a small bulldozer and rock was placed prior to relocating equipment.
- Equipment from the first site was washed on the site prior to being moved to the new site.
- Use of this site is consistent with Baker County land use ordinances.

A new, suitable office site within Baker City limits was found and relocation occurred in early January 2000:

- This site had previously been cleared and graveled.
- Use of this site is consistent with Baker City land use ordinances.

These sites, which have been in use since January 2000, should no longer contribute to the spread of noxious weeds since the weed species were not present during site inspections and appropriate clearing and graveling has occurred.

3.6 WILDLIFE

This section presents information about common wildlife species existing along the proposed route. The shrub-steppe and riparian habitat found along the proposed route

supports a variety of birds, mammals, reptiles, and amphibians. Breeding birds that live in the vicinity may include the chukar, common ravens, black-billed magpies, Swainson's hawks, red-tailed hawks, horned larks, and western meadowlarks. Common mammal species found would include elk, pronghorn, mule deer, coyotes, voles, and ground squirrels. Less common amphibians and reptiles such as the western toad, northern sagebrush lizard and western ground snake may also occur in the vicinity of the proposed route (ONHP, 2000).

Shrub-steppe provides nesting habitat for other species such as the sage sparrows, sage thrashers, and loggerhead shrikes. These species build their nests in the sagebrush branches. Other species also depend on sagebrush for loafing, cover and food source such as upland game birds, song-birds, and jackrabbits.

Large mammals that may occur in the vicinity of the proposed route include such species as elk, mule deer, and pronghorn. These species will eat sagebrush during various times of the year. Pronghorn eat substantial amounts of sagebrush throughout the year, and mule deer feed heavily on the plant during late fall, winter, and spring, particularly if other foods are covered with snow. However, these species generally have a large home range and would use the habitat in the vicinity of the proposed route for short periods throughout the year.

Small mammals like the Great Basin pocket mouse, Townsend's ground squirrel, black-tailed jackrabbit, and sagebrush voles provide a source of food for badgers, coyotes, and nesting hawks that live in the vicinity of the proposed route. Small mammals such as the jackrabbits, ground squirrels, and voles would also use the area throughout the year and for long periods of time due to each species home range requirements.

The riparian habitat found along the proposed route is associated with intermittent and perennial streams, and one small reservoir (Parcel 19) located in Malheur County. Similar species supported by the shrub-steppe habitat would also be found using the riparian habitat. However, amphibians would be the more common species found using the area.

Federally listed threatened and endangered animal species, designated critical habitat, and other species and habitats that have been identified by the BLM as sensitive are addressed below.

3.6.1 Threatened and Endangered Species

The USFWS and BLM have identified three federally listed species that may occur in the vicinity of the proposed route. Table 10 summarizes the habitat requirements, known occurrences, designated critical habitat units, and the potential for these listed species to occur in the project vicinity. An impact analysis has been conducted for the species determined to be, or likely to be, present in the vicinity based on this information.

Table 10. Threatened and Endangered Species along the Proposed Route

Species	Habitat Requirements	Potential Habitat Present In Vicinity of the Proposed Route
Canada lynx	Boreal forests.	No
Bald eagle	Shorelines with adequate prey base and perching/nesting sites.	Yes
Columbian Sharp-Tailed Grouse	Sagebrush, in particular *A. tridentata*.	No

Key: No = Habitat not present or species' range does not extend into vicinity of project, no further analysis.
Yes = Habitat present in vicinity
Source: David Evans and Associates, Inc., 1999

Canada Lynx

The Canada lynx is classified as proposed-threatened by the USFWS. The lynx is primarily an inhabitant of the boreal forests of Alaska and Canada, but also occupies some suitable habitat in the most northerly lower 48 contiguous states. Canada lynx have never been abundant due to the limited quantity and quality of boreal forest habitat. Until recently, only a few records are known from the Ochoco Mountains and the Wallowa Mountains. In 1993, a lynx was killed near Drewsey, Oregon (northeast of Burns). The Wallowa Mountains are situated over 25 miles northeast of the route and Drewsey is over 50 miles distant. Data that was provided by the Oregon Natural Heritage Program did not indicate any occurrences of Canadian lynx along the project corridor.

Bald Eagle

The bald eagle is a federally listed species, but is proposed for de-listing. The Oregon Department of Fish and Wildlife (ODFW) recommends removing the bald eagle from the Oregon State threatened species list due to near attainment of recovery goals in Oregon.

Bald eagle nesting parameters in the Pacific Northwest include proximity to water with an adequate food source, large trees with sturdy branching at sufficient height for nesting, and stand heterogeneity both vertically and horizontally. Nest tree structure is more important than tree species, and nest trees are typically among the largest in the stand providing an unobstructed view of an associated water body. Critical nesting activities generally fall between January 1 and August 31.

Wintering bald eagles concentrate in areas where food is abundant and disturbance is minimal. Because eagles often depend on dead or weakened prey, spawned salmon are often an important food source for wintering eagles. Rivers, streams and large lakes with spawning salmon and/or waterfowl concentrations are primary feeding areas for wintering bald eagles. Eagles typically perch near their food source during the day and prefer the tallest trees, which afford the best views. Deciduous and dead coniferous trees near the feeding area are preferred for diurnal bald eagle perching.

Evening roosts are generally established near the feeding area, but may occur inland as well. Wintering activities generally occur between mid-November and mid-March.

The current population of bald eagles in Oregon is 324 occupied nesting territories. Within a two-mile radius, the proposed route does not pass by any nesting sites in eastern Oregon. Wintering bald eagles could occasionally occur along the route. Wintering eagles are most likely to be present in the vicinity of the Grande Ronde, Burnt, and Snake Rivers.

Columbian Sharp-Tailed Grouse

The Columbian sharp-tailed grouse (*Tympanuchus phasianellus* ssp. *columbianus* Ord) is listed as proposed-threatened under the ESA. The US Fish and Wildlife Service is currently evaluating the listing of the species. Columbian sharp-tailed grouse are typically found in sagebrush communities, especially those dominated by big sagebrush (*Artemisia tridentata*). They favor areas within that community that contain higher densities of arrowleaf balsamroot and bluebunch wheatgrass (Tesky, 1994). Wintering habitat is commonly shrubs and small trees, although open areas where grain foods are readily available are also desirable. Open areas such as windblown ridges, mowed wet meadows and recent burns that are close to heavy cover are used for breeding or "lekking" grounds. Nesting habitat is generally found where heavy residual herbaceous vegetation exists, or in brushy or woody areas. Dense herbaceous or shrub cover is the preferred brood habitat, as it provides sources of food as well as cover. Cultivated crops, such as wheat and alfalfa, also provide food and cover.

The Columbian sharp-tailed grouse has been extirpated from Oregon. No sharp-tailed grouse have been documented in eastern Oregon except for a small population that was reintroduced in 1998 near Enterprise, Oregon, in Wallowa County (Keister, 2000). This population is approximately 45 miles away from the proposed project.

3.6.2 BLM Sensitive Wildlife Species

In addition to wildlife species listed as threatened or endangered, the BLM maintains a list of sensitive species for which population viability is a concern. The BLM is also concerned about species identified by the USFWS as species of concern. Sensitive species that could occur along the proposed route are listed in Table 11.

Townsend's Big-eared Bat

The Townsend's big-eared bat is classified as a species of concern by the USFWS. Although this species could occur along any portion of the route, roosts are not likely to be located near the route considering the level of disturbance associated with the ROWs. One Townsend's big-eared bat was observed in 1985 hibernating in a Union Pacific Railroad tunnel near Dixie about one-half mile from the proposed route (ONHP 2000). No other documented occurrences have been reported near the proposed route.

Table 11. Sensitive Wildlife Species Summary

Species	Species Status	Habitat Requirements	Potential Habitat Present In Vicinity of the Proposed Route
Townsend's big-eared bat	FSC	Caves with proper temperature and humidity for breeding, roosting, and hibernation. Also lava tubes, rock outcrops, abandoned buildings	Yes
Pygmy rabbit	FSC; BS	Dense rabbit brush or sagebrush with non-compacted soils for burrowing, typically non-grazed areas.	Yes
California wolverine	FSC; BS	High elevation forests in sub-alpine areas, typically above 4,00-feet, with minimal human activity.	Yes
Pacific fisher	FSC	Extensive mature coniferous forests and riparian areas.	No
Preble's shrew	BS	Willow dominated riparian areas in Oregon and Idaho.	Yes
Northern goshawk	FSC; BS	Primarily coniferous forests for nesting and forest or shrub-steppe habitat for wintering. Minimal human activity.	Yes
Ferruginous hawk	FSC; BS	Unbroken native prairies east of the Cascades.	Yes
Mountain quail	BS	Brushy slopes and small clearings in mountainous terrain.	Yes
Burrowing owl	BS	Open grassland, prairies, shrub-steppe; farmland east of Cascades.	Yes
Sage grouse	FSC; BS	Sagebrush plains and foothills with minimal disturbance.	Yes
Harlequin duck	FSC	Fast, flowing streams with loafing sites, dense vegetation along the banks and minimal human activity.	Yes
Yellow-billed cuckoo	BS	Riparian areas.	Yes
Tailed frog	FSC	Cold, rocky streams in Cascades and Blue Mountains.	No
Northern leopard frog	BS	Wet meadows, ponds, and riparian areas with an abundance of vegetation for cover.	Yes
Northern sagebrush Lizard	BS	Shrub-steppe and open forests of juniper and pine.	Yes

Key: No = Habitat not present or species' range does not extend into vicinity of project, no further analysis.
Yes = Habitat present in vicinity
FSC = Federal Species of Concern
BS = BLM Sensitive Species
Source: David Evans and Associates, Inc., 1999

Pygmy Rabbit

The pygmy rabbit is classified as a species of concern by the USFWS and a sensitive species by the BLM in Oregon. Pygmy rabbits could occur along the route in areas where native shrub-steppe habitat is present. The pygmy rabbit is found primarily in big sagebrush (*Artemesia tridentata*) and rabbitbrush (*Chrysothamnus* ssp.) dominated communities. It is generally limited to areas with deep soils and dense sagebrush (Tesky, 1994). The pygmy rabbit digs its own burrows in suitable soils to a

depth of about one meter. The pygmy rabbit depends on sagebrush for cover and uses it as an almost exclusive food source during the winter. The proposed route passes through suitable shrub-steppe habitat in southern Baker County/northern Malheur County on BLM lands and adjacent private property.

Museum records were gathered within two miles of the route (ONHP 2000). One record (EO-Code AMAEBO4010*019) indicates a sighting 10 miles north of Baker City (8S-39E-3) where 10 rabbits were collected. The date of the collection is unknown.

California Wolverine

The California wolverine is classified as a federal species of concern by the USFWS and is a BLM sensitive species. The ONHP reports no documented occurrences of wolverines within a four-mile radius of the proposed route (2000). Since the proposed route alignment is adjacent to existing ROWs that are subject to human activities, wolverines are not likely to regularly occupy any portion of the project route.

Pacific Fisher

The Pacific fisher is classified as a federal species of concern by the USFWS. Their presence is possible in the Blue Mountains area of the affected environment, but they are unlikely to use the immediate project area on a regular basis given their large home range requirements and tendency to avoid openings.

Preble's Shrew

The Preble's shrew is a BLM sensitive species. There are no documented occurrences within a two-mile radius of the proposed route (ONHP 2000). However, suitable habitat for Preble's shrews occurs along riparian areas of streams in the Blue Mountains.

Northern Goshawk

The northern goshawk is classified as a species of concern by the USFWS and is a BLM sensitive species. One northern goshawk nest site was documented in 1992 about two miles south of California Gulch on the Wallowa-Whitman National Forest (ONHP 2000). Potential suitable nesting habitat exists along the route that passes through mature forested areas.

Ferruginous Hawk

The ferruginous hawk is classified as a species of concern by the USFWS and is a sensitive species by the BLM. Their range is over much of the western half of the United States. There is one documented nest within one mile of the proposed route near Alder Creek in 1986 (ONHP 2000). Potential perching, hunting and nesting habitat could occur along the entire proposed route. A survey will be completed prior to construction to identify suitable nest sites within one-half mile line of sight from

the ROW/TUP workspaces appropriate mitigation to avoid impacts to the ferruginous hawk will be developed in cooperation with the BLM.

Ferruginous hawks can be found in open habitats, such as grasslands, shrub steppe, and sagebrush. Perching sites used may consist of trees, utility poles and towers, fence posts, rocky outcrops, cliffs, and on the ground. They prefer elevated nest sites, such as boulders, low cliffs, haystacks, utility structures, artificial nesting structures, and trees. Nest sites are often reused year after year so they can be quite large and contain debris accumulation. Ferruginous hawks are extremely sensitive to human disturbance especially while nesting. In areas where elevated sites are not available, they will nest on level ground. In the western states, their diet includes cottontails, black-tailed hares, ground squirrels, pocket gophers, snakes, and lizards.

Mountain Quail

The mountain quail is a BLM sensitive species. There are no documented occurrences of mountain quail within two miles of the proposed route (ONHP 2000), but they could be present in the brushy slopes of the Blue Mountains.

Burrowing Owl

The burrowing owl is classified as a sensitive species by the BLM. Burrowing owls could be present along the proposed route in the BLM land. However, there are no documented occurrences within one mile of the route (ONHP 2000). Potential habitat for the burrowing owl may occur in the following Parcels 3, 4, 10, 11, 13, 17, 19, 20, 21, and 22.

Burrowing owls are found in open, dry grasslands, agricultural and range lands, and desert habitats often associated with other burrowing animals. They typically nest in old ground squirrel burrows or badger dens. They can dig their own burrows, but prefer deserted excavations of other animals.

They can be found at elevations ranging from 200 feet below sea level to 9,000 feet. The owl commonly perches on fence posts or on top of mounds outside its burrow. They are active day and night, but are usually less active in the peak of the day.

Burrowing owls tend to be opportunistic feeders. Their diet could consist of beetles, grasshoppers, small mammals, especially mice, rats, gophers. They have been known to prey on other animals including reptiles, amphibians, young rabbits, bats, and birds, such as sparrows. However, insects tend to be their main source of food.

Sage Grouse

The sage grouse is classified as a species of concern by the USFWS and is a sensitive species by the BLM. Sage grouse could be present along the route where shrub-steppe and steppe habitat is present (Parcels 3, 4, 13, 17, 19, 20, 21 and 22). There are three sightings of sage grouse within two miles of the proposed route from the lek surveys conducted in 1988 (ONHP 2000). These three sightings all occurred in the Lost Tom

Mountain/Benson Creek area. Surveys conducted by ODFW have not identified any known lek grounds within one and one-half miles of the proposed route (Keister, personal comm., 2000).

Sage grouse depend on forbs for spring and early summer food source and rely on sagebrush during winter. Rolling hill areas of low sagebrush (*Artemsia arbuscula* and *A. longiloba*) are preferred habitat, however big sagebrush (*A. tridentata*) is used for wintering above snow (ODFW 1993). Preferred nesting and brooding habitat includes tall open canopy sagebrush with a forb component. Breeding or "lekking" grounds frequently occur in swales, meadows, windswept ridges or other open areas that are surrounded by sagebrush.

Two subspecies of sage grouse are recognized, the eastern and the western sage grouse. The ranges of both species overlap in eastern Oregon. Western sage grouse are found only in eastern Oregon and Washington, while the eastern subspecies is found throughout many of the western states except Washington. Recent studies, however, indicate that genetic differences between these subspecies may not be significant (Keister, personal comm., 2000). Suitable habitat that could be impacted by installation of the fiber optic network occurs in shrub-steppe vegetation zones south of the Blue Mountains.

Harlequin Duck

The harlequin duck is classified as a federal species of concern by the USFWS. There are no documented occurrences within two miles of the proposed route (ONHP 2000). Undocumented harlequin ducks could be present in many of the mountain streams that cross the cable route in the Blue Mountains. However, nesting is unlikely to occur near the cable route that is adjacent to existing roads and utility ROWs that are subject to human activity throughout the nesting season.

Yellow-billed Cuckoo

The yellow-billed cuckoo is a BLM sensitive species. There are no records of yellow-billed cuckoos within two miles of the proposed route (ONHP 2000).

Tailed Frog

The tailed frog is classified as a federal species of concern by the USFWS. There are no documented occurrences of tailed frogs within two miles of the proposed route (ONHP 2000), but they could occur in several streams along the proposed route in the Blue Mountains.

Northern Leopard Frog

The northern leopard frog is classified as a BLM sensitive species. Historic records exist of the northern leopard frog along the Snake River. The BLM indicates that northern leopard frogs were recorded on private land, in irrigation drainages emptying into the Malheur River between 1995 and 1998 (Bammann, pers. comm., 1999).

Northern Sagebrush Lizard

The northern sagebrush lizard is classified as a BLM sensitive species. Sagebrush lizards commonly occur in shrub-steppe habitat and often extend into open forests of juniper and pine (Nussbaum et al 1983). They can be found occurring on fine gravel soils, sandy soils, and rocky soils which are adjacent to water. Potential habitat for the northern sagebrush lizard may occur in the following Parcels 1, 3, 5, 10, 11, 13, and 19.

They are easily disturbed and immediately seek shelter in crevices, rodent burrows, and under sagebrush when alarmed. Essentially terrestrial, seldom climbs, and usually remains close to rocks, crevices, and holes which it uses as shelter. Their diet consists mainly of ants, spiders, mites, ticks, and other insect types.

3.7 CULTURAL RESOURCES

Archival research indicates that much of the route has been previously surveyed for cultural resources prior to the construction of gas pipelines and fiber optic lines. Where the previous surveys have covered the proposed Level 3 alignment, additional surveys were done only at specific places to verify the location and extent of the previously recorded cultural resource sites. Areas not previously surveyed have been, or will be, surveyed using pedestrian transects along the proposed alignment and within the Area of Potential Effect (APE). For the purpose of the field survey, the APE is a 15-meter (50-foot) wide alignment (except for the Oregon Trail as subsequently described), although construction impacts will be contained within a narrower corridor. Survey intensity is equivalent to a 15-meter interval transect. In addition, two-track dirt roads used for construction access will be surveyed for cultural resources. Appendix D identifies the cultural resources survey status by parcel. Cultural resource survey work remains uncompleted due to snowcover on Parcel 1 for the bore operation areas. No construction will be authorized by BLM until surveys are completed, to ensure that site avoidance or mitigating measures are implemented. Copies of cultural resource survey reports have been, and will continue to be, provided to the BLM and Oregon State Historic Preservation Officer (refer to Archaeological Investigations Northwest 2000a (in press), 2000b, 1999a, and 1999b).

Federal Laws pertaining to cultural resources include: the Antiquities Act (1906), the Historic Sites Act (1935), the National Trust Act (1949), the Reservoir Salvage Act (1960), the National Historic Preservation Act (1966), the National Environmental Policy Act (1969), Executive Order 11593 (1971), the Archaeological and Historic Preservation Act (1974), the American Indian Religious Freedom Act (1979), the Archaeological Resources Protection Act (1979), and the Native American Graves Protection and Repatriation Act (1990). Among these, the National Historic Preservation Act (NHPA) has been the most influential in establishing programs within federal agencies, and at the state level (SHPO), for the protection of cultural resources. The heads of the federal agencies are responsible for historic preservation through implementation of the NHPA Section 106 process for projects identified as

federal undertakings. Federal undertakings include those occurring on federal lands, funded with federal money, or licensed or permitted by a federal agency.

As noted in the National Historic Preservation Act that was amended in 1992 (16 U.S.C. 470), cultural resources are defined as districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture. It is the policy of the federal government, in cooperation with other nations, and in partnership with states, local governments, Indian tribes, and private individuals to protect and preserve these resources for future generations. Traditional Cultural Properties (TCPs) are defined as locations eligible for inclusion on the National Register of Historic Places by their association with beliefs, customs, or cultural practices important to a specific community for maintaining those traditional beliefs and customs. TCPs may include a wide range of things or places seen as important to a particular community and having continuity with the past. National Register Bulletin 38 provides guidance in identifying TCPs. Executive Order 13007 provides further guidance to federal agencies regarding access to sacred sites, some of which may qualify as TCPs.

3.7.1 Archaeological Resources

Survey and archival research indicates that there is one potentially significant cultural resource within the APE on BLM lands. The site is a historic-period, rectangular concrete foundation. The concrete appears to be a conglomerate of local pebble-sized stones. The foundation feature is located at the toe of a slope south of an overgrown road that has been cut into the slope. A debris scatter is south of the foundation, which may be associated with the site. A thorough investigation of the scatter was not made due to its location outside of the APE. The only surface artifacts were non-diagnostic colorless glass fragments (Archaeological Investigations Northwest, 2000b).

3.7.2 Oregon Trail

Because of the sensitive and fragile nature of the Oregon Trail, areas where the proposed route is within one-quarter mile of the mapped route of the Oregon Trail were considered for potential impacts to the historical setting of the Oregon Trail. No designated high potential sites or segments of the Oregon National Historic Trail are located on the Level 3 proposed route crossing BLM lands (National Park Service, 1999). Viewsheds from the Oregon Trail route retain integrity of feeling and association in undeveloped areas, particularly on BLM lands where development and economic land use has been limited. Development on these relatively pristine landscapes has escalated over the last few decades, with increasing use of utility corridors for petroleum, natural gas, electric transmission, and communications lines. The cumulative effects of these developments on the landscape, or setting of the Oregon Trail, has become a concern of the BLM. In order to address this concern, the definition of APE was expanded to encompass the landscape seen from the route of the Oregon Trail within one-quarter mile on BLM parcels. Table 12 identifies the

BLM parcels containing, or located near, the Oregon Trail within a one-quarter mile of the route.

Between 1843 and 1860, the original route of the Oregon Trail generally followed the Burnt River between Farewell Bend and Durkee (Evans 1990). Much of the route was used as the Baker City to Boise stage and freight road during the 1870-80s. In time, the thoroughfare became a state highway; and today, this route is Interstate 84.

In the Interstate 84 corridor, the integrity of the Oregon Trail has been compromised. Within one-quarter mile of Interstate 84, modern intrusions dominate the landscape and have greatly altered the historic setting. Where the Trail was once located, today major utilities, pipelines, railroads, county roads, highways, communities and industrial developments have obliterated most of the evidence for the original Oregon Trail and later wagon roads. An exception is a short remnant of historic wagon road on private land in the Burnt River canyon bottom. This site is avoided by the Level 3 proposed route. No intact Oregon Trail ruts have been identified within the proposed route on BLM lands in the Interstate 84 travel corridor.

Oregon Trail route locations are present on BLM Parcels 6, 13, 14 and 19. Parcels 13 and 19 will be crossed by the proposed route adjacent to roads and utility ROWs. On Parcel 6 the network will be located within the road prism of Old Highway 30 and the TUP workspace will be adjacent to the road ROW, which will avoid the Oregon Trail. Parcel 14 is avoided by the proposed route. Other BLM parcels in the Burnt River Canyon are adjacent to the Interstate 84 corridor along what was once the historic route of the Oregon Trail.

At BLM Parcels 13 and 19, the Trail route includes wagon ruts and ranch roads. Parcel 19 is proposed for BLM management designation as an Area of Critical Environmental Concern (ACEC), to protect the Oregon Trail ruts; Parcel 13 is a designated component of the Oregon Trail ACEC in the Vale District (BLM 1989). Between Parcels 13 and 14, the historic Trail route detoured away from the Burnt River Canyon to cross a low pass in the hills. The Trail route follows what is presently a dirt ranch road. Since the 1950s, previous utility corridors have crossed all Parcels 13, 14 and 19, resulting in low to moderate visual intrusions in the historic setting. However, protecting any intact physical remains of the Oregon Trail and minimizing additional impacts in the historic setting on BLM lands are objectives currently identified for Oregon Trail management.

The proposed route will cross Parcels 13 and 19 by running adjacent to existing pipeline ROWs; Parcel 14 is avoided by installing the network on private lands. On Parcel 13, the Level 3 ROW will be located on the east side of the existing utility ROW corridor, more than one-quarter mile (1400-1600 feet) distant from the Oregon Trail route. The Level 3 ROW will be installed on the east side of the existing utility corridor on Parcel 19 (on the opposite side of the existing utility ROW corridor, approximately 1500 feet from the Oregon Trail).

Table 12. Location of the Oregon Trail

Parcel No.	Route Location	Trail Features	Trail Setting
6	Proposed Level 3 route in Old Highway 30 roadbed. Former route of Oregon Trail between Old Highway 30 and Interstate 84.	Visible ruts in this area, but these are difficult to discern due to disturbances.	Road cuts, Old Highway 30, Interstate 84
10	Proposed Level 3 route adjacent to pipeline corridor. Former route of Oregon Trail along Sisley Creek east of pipeline corridor more than ¼ mile.	No ruts.	Railroad, pipeline, Interstate 84, Weatherby safety rest area.
12	Proposed Level 3 route adjacent to pipeline corridor and pipeline access road. Level 3 route is more than ¼ mile away from the Oregon Trail (on BLM).	No ruts.	Railroad, county roads, Interstate 84, pipeline.
13	Proposed Level 3 route adjacent to pipeline corridor. Former route of Oregon Trail along more than ¼ mile east of pipeline and proposed Level 3 route.	Trail road.	Pipeline
14	Proposed Level 3 route on private land east of BLM parcel. Former route of Oregon Trail along ranch road through parcel less than ¼ mile away.	No ruts.	Ranch, ranch road, pipeline.
15	Proposed Level 3 route adjacent to Old Highway 30. Former route of Oregon Trail parallels Old Highway 30, where highway has been excavated into the hill.	No ruts.	Railroad, power line, Old Highway 30, Interstate 84, pipeline.
16	Proposed Level 3 route parallels Old Highway 30. Former route of Oregon Trail parallels Old Highway 30, where highway has been excavated into the hill.	No ruts.	Railroad, Old Highway 30, sand and gravel shed.
19	Proposed Level 3 route adjacent to pipeline corridor. Former route of Oregon Trail south and west of pipeline less than ¼ mile.	Visible ruts.	Pipeline, ranch road.
20	Proposed Level 3 route parallels pipeline corridor. Former route of Oregon Trail and Birch Creek south and west of pipeline more than ¼ mile on private land.	No ruts.	Pipeline, ranch road.

3.7.3 Treaty Reserved Rights and Federal Trust Responsibility

The management of federal lands under the BLM jurisdiction must be conducted in a manner responsive to various treaties between Indian tribes and the Federal Government. The BLM has a Trust Responsibility to various treaty tribes to uphold the provisions of ratified treaties. Through relinquishment of lands in the west, tribes ceded lands, but retained or reserved certain rights that are protected by treaty. For example, among other rights, Indian treaty tribes retained the right to fish, hunt, and gather various materials in usual and accustomed places. The BLM has a responsibility and obligation to protect tribal land, assets, resources, and treaty rights. Likewise, the American Indian Religious Freedom Act (42 U.S.C. 1996), among other things, provides for the access to sacred sites by American Indians and the freedom to practice traditional religions.

3.7.4 Paleontological Resources

One potential paleontological locality (Pliocene/Miocene) has been identified, based upon recovery of a fossilized, fragmentary animal bone in 1976. Recent surveys of the locality, including the Level 3 proposed route, revealed no newly exposed vertebrate fossils. The original construction of Highway 30 disturbed the locality more than 30 years ago.

3.8 ECONOMIC AND SOCIAL ENVIRONMENT

The proposed route passes through three northeastern Oregon counties and is typically located in rangeland areas. Table 13 summarizes the economic and demographic conditions of these counties.

Along the proposed route, Union County experienced the least growth with nearly 5 percent. Union County has the highest population density (11.6), whereas Malheur County has the lowest population density (2.6) and the lowest per capita income ($26,324). Union County has the highest per capita income ($30,487).

Table 13. Project Area Demographics

County/City Name	Estimated Population[1]	Population per square mile[2]	Estimated Median Household Income[3]
Union County	24,829	11.60	$30,487.00
Baker County	16,448	5.00	$27,161.00
Malheur County	28,542	2.60	$26,324.00

[1]County estimates from 1998 US Census Bureau report released in 1999
[2]Population density from 1990 US Census Bureau report released in 1996
[3]Estimated Median Household Income from 1995 US Census Bureau report released in 1999

3.9 VISUAL RESOURCES

The quality of visual resources is related to the arrangement, scale, context, and diversity of landscape features such as vegetation, water, and landforms. In general, where a view consists of highly contrasting landscape features and the absence of human modifications, the visual quality is considered high. Views dominated by human alterations to the landscape are considered to have low quality. Along the proposed route, visual quality of the surrounding landscape varies from low in urban areas to high in relatively pristine mountainous areas. The majority of the route travels through agricultural areas and rangelands that can be considered to have medium visual quality.

Visual Resource Management Classes (VRM) have been established and are used by the BLM. Two BLM parcels crossed by the proposed route have VRM requirements: Parcel 13 is located within a designated ACEC in the Baker Resource Area and Parcel 19 is within a proposed ACEC in the Malheur Resource Area. Each has significant historic and visual resource concerns due to proximity to the Oregon Trail. Although Parcel 14 is not a designated or proposed ACEC, it also contains part of the Oregon Trail. The Oregon Trail route on Parcel 14 ranges from 600 to 1,000 feet from the Level 3 route on adjacent private property; thus, visual resource concerns also apply.

The route traverses open forests of the Blue Mountains, then drops down to the Snake River valley. Views include open agricultural landscapes, forest interiors, shrub-steppe zones, and rural cities such as Baker City and La Grande. Through the Blue Mountain region, the visual quality is high. Visual quality is medium in agricultural landscapes due to human modifications to the landscape.

3.10 RECREATION

Outdoor recreation is an integral facet of the quality of life in the Pacific Northwest. It is estimated that millions of people visit parks, fishing areas, BLM lands, and other recreational facilities per year in the Pacific Northwest. As a result of the high use, many people are easily exposed to disturbances in or near recreation areas. The proposed route does not cross any BLM recreation facilities. However, dispersed recreation by hunters, hikers, equestrians, fishermen and other recreationists use these dispersed parcels of public land.

3.11 LAND USE

Most of the proposed route through undeveloped BLM lands is adjacent to roads and utility ROWs. Agriculture, rangeland, forestland and established roads characterize this segment. Land uses include mining, agriculture, recreation, scenic viewing, timber harvest, livestock grazing, and conservation. The BLM lands along this section are primarily managed for livestock grazing, wildlife habitat, and recreation. The

proposed route crosses several unpatented mining claims on BLM parcels. These claims are identified by parcel in the POD.

Existing roads on BLM parcels that will be used in conjunction with construction activities can be differentiated into two categories: public (county and state) and two-track dirt roads (casual use). Public roads generally are well traveled. Unimproved two-track dirt roads, used for farming, forestry, grazing, and mining, are open to casual use. Construction and maintenance associated with the Level 3 project will be limited to public roads unless authorization is secured from BLM or other appropriate granting authority.

3.12 AIR QUALITY

In general, the air quality is very good along the proposed route and complies with the applicable standards. The La Grande area is currently classed as a non-attainment area for PM_{10}[2] and for carbon monoxide. The primary sources of air quality deterioration are blowing dust, emissions from various burning activities, vehicle emissions, and other activities that will generate or entrain dust.

3.13 NOISE LEVELS

No monitoring of noise levels or trends is available for the proposed route. Primary sources of noise on the route are both from rural and urban activities. The predominately, long-term background source of noise is from the railroad and traffic in cases where the proposed route is along railroad or road ROW. Typical noise levels associated with human activities occurring in the vicinity of the proposed route range from low to high in intensity but are generally infrequent or occasional.

3.14 CRITICAL ELEMENTS OF THE HUMAN ENVIRONMENT

Myriad regulations, acts and executive orders direct land management agencies to consider critical elements of the human environment within the NEPA process. The following section identifies these elements and addresses or directs the reader to the appropriate section in this EA for further discussion.

Air Quality (The Clean Air Act of 1995, as amended)

Air quality is addressed in sections 3.12 and 4.12 of this EA.

[2] PM_{10} are particulates less than 10 microns in diameter.

Areas of Critical Environmental Concern (Federal Land Policy Management Act of 1976)

ACECs are addressed in the cultural resources (3.7 and 4.7) and visual resources (3.9 and 4.9) sections of this EA.

Cultural Resources (National Historic Preservation Act of 1966, as amended)

Cultural resources are addressed in sections 3.7 and 4.7 of this EA.

Environmental Justice (Executive Order 12898)

Executive Order 12898, and its accompanying memorandum, has the purpose of ensuring that each federal agency make achieving environmental justice part of its mission by identifying and addressing (as appropriate) disproportionately-high, adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. Scoping and public comment processes target all populations potentially affected by the project to enable issues to be raised that may relate to environmental justice concerns.

Farm Lands (Prime and Unique) (Surface Mining Control and Reclamation Act of 1977)

Agricultural and grazing lands are addressed in sections 3.11 and 4.11 as part of the land use assessment of this EA. Exclusive Farm Use lands, as designated by Oregon Statewide Planning Goals, were crossed in other areas of eastern Oregon. These areas were permitted through the Conditional Use Permits issued by respective counties as addressed in Section 1.5.

Floodplain (Executive Order 11988, as amended)

As described in Section 3.2, floodplains of high and medium value wetlands and streams are avoided by directional boring, which will be staged outside the 100-year floodplain boundaries. Where floodplains are crossed by plowing or trenching (as described in Section 3.2), mitigation measures for these crossings have been approved by BLM.

Invasive Species (Noxious Weeds)

Noxious weeds are addressed in sections 3.5 and 4.5 of this EA.

Native American Religious Concerns (American Indian Religious Freedom Act of 1978)

This critical element is addressed in sections 3.7 and 4.7 as part of the cultural resources assessment of this EA.

Roadless and Natural Areas

There are no Roadless Areas or designated Natural Areas located in or adjacent to the Level 3 proposed route on BLM lands. Therefore, this resource issue will not be further addressed in the environmental analysis.

Threatened or Endangered Species (Endangered Species Act of 1973, as amended)

Threatened and endangered species are addressed in sections 3.4 and 4.4 (fisheries), 3.5 and 4.5 (plants), and 3.6 and 4.6 (wildlife) of this EA.

Wastes, Hazardous or Solid (Resource Conservation and Recovery Act of 1976, and Comprehensive Environmental Response, Compensation, and Liability Act of 1980)

A Contamination Screening Assessment (CSA) was performed for this project (Parsons Brinckerhoff, 1999). Based on the results of the CSA, no potential contaminated sources have been identified as posing a potential risk during construction along the eastern Oregon portion of the proposed route. Therefore, this critical element will not be further addressed in the environmental consequences section of this EA.

Water Quality, Surface or Ground (Safe Drinking Water Act of 1974, as amended and Clean Water Act of 1977)

Water quality is addressed in sections 3.2 and 4.2 of this EA.

Wetlands/Riparian Zones (Executive Order 11990)

Wetlands, streams and Riparian Habitat Conservation Areas (RHCAs) are addressed in sections 3.2 and 4.2 of this EA.

Wild and Scenic Rivers (Wild and Scenic Rivers Act of 1968, as amended)

There are no Wild and Scenic Rivers located in or adjacent to the Level 3 proposed route on BLM lands. Therefore, this resource issue will not be further addressed in the environmental consequences section of this EA.

Wilderness (Federal Land Policy Management Act of 1976 and Wilderness Act of 1964)

There are no proposed or designated Wilderness Areas located in or adjacent to the Level 3 proposed route on BLM lands. Therefore, this resource issue will not be further addressed in the environmental consequences section of this EA.

4 ENVIRONMENTAL CONSEQUENCES

This chapter assesses a complete picture of the environmental consequences of the project on BLM-administered public lands, but also takes into account the connectivity of the route and any impacts the line would have on resources on BLM lands, whether the impacts resulted from Level 3's actions on federal or non-federal lands. Each resource presented in the following chapter is evaluated for potential impacts with respect to the installation of the buried conduit and handhole network, and filling 2 of the 12 conduits with fiber optic cable. Long-term operation and maintenance associated with the ROW, which includes filling the remaining ten conduits with fiber optic cable and access for maintenance activities, requires subsequent environmental clearance and authorization from BLM. Mitigation measures (presented in Section 2.1 as part of the proposed action) are an integral part of the Level 3 project to reduce adverse environmental disturbance created by installing the fiber optic network on BLM lands.

4.1 GEOLOGY, GEOMORPHOLOGY, AND SOILS

Construction of the proposed project will disturb soils within the ROW and TUP areas, including access roads, on BLM lands. Potential impacts of soil disturbance include soil exposure and subsequent erosion, loss of topsoil, compaction, and the spread of noxious weeds.

Soils will be exposed to wind and water erosion potential by blading and by the necessary trimming, cutting or clearing of vegetation in order to safely maneuver construction equipment. In cleared areas, soils will be subject to increased erosion potential until vegetation recovers. The loss of topsoil, compaction, and the spread of noxious weeds may impact soil productivity. Loss of topsoil is a potential impact in areas where the conduits are installed using trenching or rock sawing. Where conduits are buried using a conventional or a spider plow, the plow will create a furrow rather than an open trench, so layers of topsoil and subsoil will not be disrupted. Soil compaction will occur because of the heavy construction equipment use. In dry conditions, this compaction will be minimal and will not adversely affect soils. Under wet conditions, compaction will be more substantial, deep rutting could occur, resulting in long-term damage to soil structure.

The spread of noxious weeds is a potential impact that could adversely affect soil productivity over the long term. These impacts are described more fully in Section 4.5.

In areas where rock trenching is required, construction may result in fractured rock and exposed strata of volcanic or sedimentary origin. This potential is highest where bedrock is close to the surface along the proposed route. Excess exposed rock will be either left on site or removed from BLM land and disposed at an appropriate facility

per approval of the authorized BLM officer. No blasting will occur as part of this project.

Previous construction on private property as well as the bore operation areas associated with directional boring Powell Creek may indirectly contribute to erosion and sedimentation on the adjacent BLM Parcel 14. This is due to the potential loss of vegetation and topsoil.

The potential for soil exposure and subsequent erosion, loss of topsoil, and compaction, and the spread of noxious weeds will attenuate steadily over time as revegetation becomes reestablished. Erosion, loss of topsoil, and compaction impacts are expected to be minor and short term due to the mitigation measures outlined in Section 2.1. An increase in the spread of noxious weeds is a potential impact that may not be apparent for several years after construction, and may contribute to prolonged degradation of soil conditions. Long-term adverse effects to soil productivity from noxious weeds are unlikely because the disturbed areas will be monitored for five years, weed control plans will be implemented if necessary, and native vegetation is expected to be partially reestablished during that timeframe. These impacts are expected to decrease over time as native or revegetated species continue to reestablish in disturbed areas.

4.2 HYDROLOGY, WATER QUALITY, STREAMS AND WETLANDS

The proposed project will generally avoid direct impacts to water resources on BLM lands by boring beneath streambeds rather than conducting in-water work, and by boring all high- and medium-value wetlands. However, directional boring of intermittent and perennial streams, and high- and medium-value wetlands does pose potential impacts to these resources. Potential impacts include the risk of frac-outs (approximately one out of eight bores may have this occurrence), sediment loading into streams and wetlands, and possible fuel releases from equipment in the bore staging areas.

Directional boring uses a pressurized inert bentonite-clay fluid in areas of rock substrate. Leakage of the drilling fluid though fractures in a stream substrate is possible during boring operations. Several gallons of drilling fluid could enter the stream in the event of a frac-out, causing a short-term increase in the turbidity. Bentonite fluid could also seal part of a streambed with clay, and cause an indirect impact to biological processes. (See also Section 4.3, Fisheries.)

Traffic associated with bore operations can potentially affect stream resources and water quality by contributing additional sediment. Construction traffic associated with directional boring may involve 2-3 times as many ingress/egress trips to the site as compared to plowing and trenching construction methods. This is mainly due to supplying the operation with water from off-site as well as its subsequent removal and disposal in a designated facility.

Low-value wetlands and some dry intermittent and ephemeral drainages will be plowed or trenched, as approved by BLM and ODSL. In these instances, there may be short-term impacts to water quality due to increased sedimentation and unanticipated release of subsurface flow. No in-water work will occur. Plowing or trenching will not occur before May 1, to avoid constructing during high flow and soil saturation conditions when adverse effect could be more substantial. Construction between May 1 and July 1, 2000 will require authorization from BLM. Roadside ditches may be temporarily disturbed during construction.

For directional boring, two drilling pits are required, one on either side of the water resource to be crossed. The potential for a spill of equipment fuel or fluid in these areas exists, and has a potential to adversely affect water quality. A spill could cause a short-term toxic contamination of soils and water quality, and if left unremediated, may adversely affect these resources in the long term as well.

Because there will be no vegetation removal in RHCAs, the project will not alter the shading regime, and thus will not affect temperature characteristics of the streams or wetlands.

Indirect effects to water quality on Parcel 14 may potentially occur from construction on adjacent private property. Erosion and sedimentation associated with the directional bore operation to cross Powell Creek on private property could affect downstream water quality. Implementing mitigation in Section 2.1.3 for the bore operation on private lands will reduce potential adverse effects to Powell Creek on Parcel 14 as well as further downstream.

Impacts have resulted from previous construction that inadvertently occurred on BLM land (Parcel 1, California Gulch) prior to approval (refer to Section 3.2). Existing impacts associated with this construction include a 60-foot wide disturbance area to the RHCA of the intermittent stream; soil compaction in the RHCA; damage to stream banks; disturbance and loss of riparian vegetation; increase in stream turbidity and sedimentation; additional rock heaved to the ground surface; and loss of topsoil.

The proposed action includes measures to rectify the impacts in the California Gulch area. The areas of compaction will be regraded to original contours. Upland areas will be reseeded with a seed mix such as the mix for timbered sites specified in the Site Revegetation Mitigation (Section 2.1.7). No equipment will be allowed in the RHCA. The disturbed riparian areas will be broadcast seeded with a riparian seed mix as identified in the Site Revegetation Mitigation (Section 2.1.7). Any lost topsoil from previous construction will be replaced from a local provider. All replacement topsoil will be free of rocks, boulders, cobbles, gravel and noxious weed seed (as stated in Geology and Soils Mitigation, Section 2.1.2).

Following completion of installing the network on this parcel, excess rock will be removed and disposed at an appropriate facility per approval of the BLM. The construction that has occurred took place in August 1999, a dry season. However, over the course of the following winter and early spring, rain and snowmelt has

increased the potential for changes in stream turbidity and sedimentation. Siltation fences were installed during the original construction to reduce erosion and sedimentation of disturbed soils into the stream channel. When Level 3 is authorized to complete construction and implement restoration, the Site Stabilization Mitigation measures (Section 2.1.6) will be employed to reduce further erosion and stream sedimentation. A directional bore will be used to install the network under the stream and the bore operation areas will be staged outside the 100-year floodplain boundaries (Sections 2.1.3 through 2.1.5). These corrective measures will diminish existing impacts over the long term.

In other areas along the proposed route on BLM lands, construction may cause a minor, short-term increase in turbidity, and removal of habitat, creating sterile conditions (e.g., sealing of the streambed) in the event of a frac-out while boring under streams. Erosion may increase sediment in waterways, and may have a residual short- and long-term effect. Potential water quality impacts from the release of drilling fluids or fuel spills would likely have some short-term effect on biological processes and could have residual long-term effects as well. (See Section 4.3 for further discussion of fisheries.)

4.3 FISHERIES

Potential impacts on fish populations include stormwater runoff containing contaminants, and sediment runoff into streams and rivers. Toxic contaminants could injure or kill fish, and sediments could clog spawning and rearing habitats, reducing survival rates. The risk associated with directional boring could cause these impacts by releasing drilling fluids into streams. For those stream crossings where directional boring is used, the possibility of releasing drilling fluid to the stream through porous or fractured rock does exist (approximately one out of eight bores may have this occurrence). This bentonite clay lubricant could cause sedimentation and could injure fish directly by clogging gills. If drilling fluid is released into a stream it may adversely affect fisheries habitat by sealing part of the streambed, creating sterile conditions.

Some streams along the route do not support fish or provide low-quality fish habitat, but they do contribute to the water quality of fish-bearing waters downstream. This includes Parcel 11, where several intermittent and ephemeral drainages are crossed where the proposed route follows an existing dirt road. Some additional sediment load will likely be contributed to the flow regime due to the new disturbance in this area during construction.

Project construction may cause a minor, short-term increase in turbidity, in the event of a frac-out while boring under streams. Short-term and long-term erosion may increase sediment in waterways, and could cause an adverse effect. The release of drilling fluids or fuel spills may affect fisheries over the short and long term.

Specific considerations and environmental consequences for federally listed threatened and endangered fish species are further discussed in the next sections.

4.3.1 Threatened and Endangered Fish Species

Chinook Salmon

Data provided by the ONHP listed the Grande Ronde River as a location along the proposed route where spawning occurs of listed Chinook salmon. No streams containing Chinook salmon are crossed on BLM lands. The addition of sediment to one tributary of the Grande Ronde River can occur on Parcel 1. Risk of adverse effect is high if directional boring occurs before July and highest if done during March and April. The directional bore for the intermittent stream on BLM Parcel 1 will not occur until after May 1, 2000. Boring of this stream between May 1 and July 1, 2000 will require authorization from the BLM.

Risk is associated with the potential release of water, mud and bentonite (a "frac-out") into a stream through fractures in the substrate that is being directionally bored (approximately one out of eight bores may have this occurrence). This release may contribute to sedimentation of the stream and removal of habitat creating sterile conditions (e.g., sealing of the streambed). Damage and fish mortality could occur from the bentonite clogging their gills. No direct impacts to salmon will occur due to the distance away (approximately six miles) from spawning grounds where the actual construction will occur on BLM land.

Based on the proposed construction methods and the implementation of mitigation measures, the project may affect, but is not likely to adversely affect, Snake River fall and spring/summer Chinook salmon or their critical habitat.

Steelhead Trout

Mid-Columbia River and Snake River steelhead trout are likely to occur in numerous perennial streams that do not have fish passage barriers along their length and contain suitable habitat. Tributaries of the Columbia River (that the proposed route on BLM lands crosses or parallels) currently or possibly utilized by steelhead trout include the Grande Ronde River.

No streams containing steelhead are crossed in eastern Oregon on BLM lands. The addition of sediment to one tributary of the Grande Ronde River can occur on Parcel 1. Risk of adverse effect is high if directional boring occurs before July and highest if done during March and April. The directional bore for the intermittent stream on BLM Parcel 1 will not occur until after May 1, 2000. Boring of this stream between May 1 and July 1, 2000 will require authorization from the BLM.

Risk is associated with the potential of the release of water, mud and bentonite (a "frac-out") into a stream through fractures in the substrate that is being directionally bored (approximately one out of eight bores may have this occurrence). This release

may contribute to sedimentation of the stream and removal of habitat creating sterile conditions (e.g., sealing of the streambed). Damage and fish mortality could occur from the bentonite clogging their gills. Potential impacts to steelhead could occur. Steelhead spawning grounds are less than 2 miles from the location of construction on BLM land (Dougan per. comm., 2000).

Based on the proposed construction methods and the implementation of the mitigation measures in Section 2.1, the project may affect, but is not likely to adversely affect, Mid-Columbia River or Snake River steelhead trout or their habitat.

Bull Trout

Data provided by the ODFW (Zakel, 1999) indicated that the Grande Ronde River, and its tributaries, currently contain populations of bull trout. Similarly, the Powder River and its tributaries are known to have populations of bull trout present (Zakel, 1999). Bull trout may occur in the mainstem of the Burnt River and Snake River and/or associated perennial tributaries that provide suitable habitat.

No bull trout have been documented in streams on BLM lands crossed by this project. The avoidance of flowing streams will minimize potential impact to bull trout habitat. Potential indirect impacts to bull trout may involve contamination of stormwater runoff from construction areas. Sediment deposition from eroding areas could possibly reduce spawning habitat for salmonids, and lower the survival rates for eggs and alevins. Directional boring will be used in crossing streams in areas underlying with porous or fractured rock, so it is possible that drilling fluid may be accidentally released into the stream (approximately one out of eight bores may have this occurrence). This could possibly contribute to sedimentation impacts and removal of habitat creating sterile conditions (e.g., sealing of the streambed). Damage and fish mortality could occur from the bentonite clogging their gills. For the Grande Ronde River tributary on Parcel 1, no direct impacts to bull trout will occur due to the distance away (approximately six miles) from spawning grounds where the actual construction will occur on BLM land.

Based on the proposed construction methods and the implementation of the mitigation measures in Section 2.1, the project may affect, but is not likely to adversely affect, bull trout or its habitat.

4.4 VEGETATION

The project will affect vegetation when it is necessary to trim, cut or clear in order to safely maneuver construction equipment during the installation of the fiber optic cable. Vegetation will be crushed and rutted out elsewhere by construction equipment in an area up to 30 feet in width for typical construction, and wider in some areas (refer to Table 2 in Chapter 1). In areas that do not require vegetation removal to safely maneuver construction equipment, the construction equipment will crush the vegetation during the installation of the fiber optic cable. Limited removal of trees

and/or brush within the construction zone is expected, and will be cut flush with the ground to maneuver the equipment safely along the right-of-way.

Construction may result in loss of topsoil which could hinder revegetation efforts. Until vegetation is reestablished, newly disturbed areas will not provide cover for area wildlife. Increased erosion and sedimentation may affect reestablishment of riparian vegetation, as described in Section 4.2.

The proposed construction will remove or crush vegetation within the 30-foot-wide construction zone and additional areas as identified in Table 2. The total area to be disturbed is estimated to be 57 acres over a total linear distance of approximately 140 miles (Table 2), most of which is vegetated.

There is a potential for noxious weeds to become established in newly disturbed areas. An uncontrolled increase in noxious weeds would adversely affect the success of revegetation efforts. (See Section 4.5 for further discussion of potential impacts of noxious weeds.) There is also a potential for indirect impacts on BLM lands as a result of vegetation removal on adjacent (non-BLM) lands where construction is complete or underway. Indirect effects to vegetation could include soil erosion from loss of vegetation and the spread of noxious weeds.

Impacts to vegetation have resulted from previous construction that inadvertently occurred on BLM land (Parcel 1, California Gulch) prior to approval (refer to Chapter 3). An area of approximately 60 feet in width was disturbed, causing impacts to successional riparian vegetation and compacting soils. The construction also resulted in the loss of some topsoil, and caused a short-term increase in sedimentation and turbidity.

The proposed action includes measures to rectify the impacts in the California Gulch area. There will be no additional disturbance to riparian vegetation. Overseeding with a riparian species mix will be done in the wetland area, and excess spoils outside of the wetland area will be removed. These corrective measures will reduce impacts in the long term.

By implementing the vegetation and weed mitigation measures (Section 2.1) during and after construction, impacts will be minimized and short term. The proposed action is not likely to adversely impact vegetation in the long term. Loss of some topsoil on non-BLM lands may hinder revegetation success and increase the spread of noxious weeds. As stated in Chapter 3, weed control and revegetation with native species also has been or will be done on non-BLM lands (unless otherwise directed by the landowner) where construction is complete or underway. These measures will reduce potential long-term, indirect effects on BLM lands and resources from construction on adjacent lands, including erosion, noxious weeds, and loss of vegetation.

4.4.1 Threatened and Endangered Plant Species

No plants federally listed under the ESA have been found to occur in the vicinity of the proposed route. The proposed route on BLM lands will be located adjacent to existing disturbed roads or utility ROWs and will widen the area of existing disturbance but will not affect native vegetation in most areas. Therefore, the project is not expected to have any effect on federally listed plant species. Nonetheless, pre-construction surveys and avoidance measures described in Section 2.1 will be implemented to ensure that listed plant species are not adversely affected.

4.4.2 BLM Sensitive Species

On BLM land, a sensitive plant survey has been conducted along the alignment to locate any sensitive plant colonies. Twelve colonies of *Haplopappus radiatus* were located in BLM Parcel 14 in Baker County. Locating the Level 3 ROW off this parcel avoided these plant communities. However, project botanists located this species on unsurveyed adjacent private lands (HDR 1999) and, thus, this species has been impacted by previous project construction. As stated in Section 3.4.2, nine populations of approximately 500-600 plants were destroyed by construction on non-BLM portions of the route in the area of Parcel 14, and another three-quarters of a mile was not surveyed for this plant. For impact assessment purposes, it is assumed that previous construction impacted a similar number of plants on this private property segment as would have been affected on BLM Parcel 14. Therefore, the worst case scenario loss would involve up to 1,000 plants. Based on a BLM 1997 inventory for *Haplopappus radiatus*, this species is now known to occur over a wider area than previously indicated. Total estimate of the species is approximately 250,000 plants. Therefore, this possible loss (less than 1% of the total inventory) is not sufficient to contribute to a federal threatened or endangered listing of the plant species through direct impacts (Button, pers. comm., 2000).

Indirect effects to *Haplopappus radiatus* on Parcel 14 may potentially occur from construction on adjacent private property. Erosion, sedimentation, loss of vegetation and spread of noxious weeds associated with the directional bore operation to cross Powell Creek on private property could affect communities of this sensitive plant species. Implementing mitigation in Section 2.1.3 for the bore operation on private lands will reduce potential adverse effects to *Haplopappus radiatus* on Parcel 14.

Although no additional sensitive plant species have been identified along the proposed route on BLM lands (HDR 1999), *Haplopappus radiatus* has been recorded on BLM Parcels 11, 12, 13 and 15 (ONHP 2000). A qualified botanist will be onsite during construction on these parcels to monitor for the presence of this species, and will stake boundaries of any identified plant communities. An authorized BLM officer will direct construction around the plant communities or change construction methods to directional bore if necessary, to avoid impacting this sensitive plant species.

Noxious weed spread as a result of the project may contribute to the temporary loss of native vegetation that supports plant species habitat, or compete directly with special-status plants. However, vegetation and noxious weed mitigation measures, monitoring and treatment (Sections 2.1 and 4.5) will reduce potential noxious weed spread to a short-term disturbance that is not expected to adversely affect these plant species habitats.

4.5 NOXIOUS WEEDS

Potential impacts of noxious weed spread include a loss in native vegetation that supports wildlife and plant species, and a loss in suitable agricultural lands and soil productivity, which have economic consequences. The ground disturbance and vegetation removal required for project construction on BLM lands will increase the potential for noxious weed invasion along the proposed route and adjacent lands. Disturbed areas often harbor noxious weeds. The proposed route across BLM lands is directly adjacent to previously disturbed roads and utility ROWs, so noxious weeds may be present along these disturbed areas. This increases the potential for noxious weeds to be dispersed from existing disturbance areas to newly disturbed areas that will result from the project construction.

Level 3's previous project construction activities on non-BLM lands in Baker and Malheur counties may have contributed to noxious weed spread in the area. As described in Section 3.5, an initial construction staging area was located in a major diffuse knapweed population area. Noxious weed seeds may have adhered to construction equipment staged from this site, and been transported to other areas along the project route in Baker and Malheur counties.

The invasion and spread of noxious weeds may not be apparent for one or two seasons after construction. Therefore, potential impacts cannot be accurately identified in the short-term, post-construction time frame. Instead, impacts may become known only over the course of several seasons.

The preventative measures, monitoring, and treatment programs that Level 3 has committed to will help prevent and control increases in noxious weed spread in the project area. The potential for the spread of noxious weeds will attenuate steadily over time as native or revegetated species are reestablished in the disturbed areas. It is estimated that pre-construction vegetation levels of native species will be attained within approximately ten years after construction. During the first five years following construction, weed inventories and monitoring will continue, and any increases in noxious weeds will be controlled while native species continue to reestablish themselves.

Implementation of the mitigation measures is expected to prevent major increases in the spread of noxious weeds caused by the project. There will likely be some increased occurrence of weeds in the area in the short term (0 to 5 years) which will be controlled through treatment plans. Treatment plans may not be completely

effective immediately, so impacts may last more than one season until control is complete. For these reasons, it is expected that increases in noxious weed spread due to the proposed action on BLM lands and previous construction on non-BLM lands may affect native vegetation, species habitat, or land use in the short term until eliminated by treatment. This impact would not contribute to the need to list sensitive plants or wildlife as threatened or endangered.

4.6 WILDLIFE

Potential long-term impacts on wildlife species include loss of vegetation that might be used for cover or a food source, and potential direct mortality of individual animals during construction. Short-term impacts consist of disturbance from construction noise, and temporary disruption impacts to species during installation of fiber optic cable.

The proposed construction will remove or crush vegetation within the 30-foot-wide construction zone and additional areas as identified in Table 2. The total area to be disturbed is estimated to be 57 acres (Table 2), most of which is vegetated. This will reduce the amount of native vegetation available to area wildlife species for food and cover by about 57 acres over a total linear distance of approximately 140 miles.

There is a potential for direct mortality of individual animals during construction. This potential is most likely for small animals such as rodents and reptiles.

Large and small animals in the vicinity of construction will be disrupted by equipment noise as construction passes through an area. Most animals will leave the immediate area because of the noise, and will remain out of the area until construction activities are completed and natural resources have recovered.

Disruption impacts to area wildlife will be short-term, lasting only as long as construction and restoration activities are underway in any given portion of the construction corridor. Suitable habitat exists adjacent to the ROW/TUP workspaces, but less habitat will be available for the same population numbers. The indirect effects of stress and habitat loss may contribute to some individual animal mortality in the long term.

Loss of native vegetation in construction disturbance zones will slightly reduce the amount of available habitat. The revegetation may reach pre-construction conditions within ten years after construction completion. Until native or revegetated species are reestablished, area wildlife will utilize the adjacent habitat areas, but some losses due to forage and cover depletion may occur in the short term. Potential long-term habitat impacts due to spread of noxious weeds will be reduced through implementation of the noxious weed prevention and control measures outlined in Section 4.5. These measures will prevent long-term adverse impacts to habitat along the construction zone.

Direct mortality of some individual animals will be an unavoidable adverse impact, but will not adversely affect any species' population to any substantive degree.

4.6.1 Threatened and Endangered Species

Canada Lynx

Proposed construction will not impact forested habitats used by lynx, due to the area of disturbance being adjacent to existing roads and utility rights-of-way. Noise that will result from construction will be short-term and not affect only one area for very long. Construction activities and associated noise are unlikely to pose any new disturbance to lynx using habitat areas in the vicinity of the project.

Lynx may occur through shrub-steppe habitat in eastern Oregon as they disperse and travel, foraging on jackrabbit populations. There is a potential for lynx to move through the area while construction is underway. Any impact is expected to be minimal and temporary since construction will proceed relatively quickly through the area.

Bald Eagle

During construction wintering eagles may be present in the project vicinity. No potential nest trees will be removed. Most areas identified along the route as being utilized by wintering bald eagles are adjacent to existing, disturbed ROWs. Short-term and localized disturbance created by the construction activities will not likely jeopardize eagle populations.

Numerous streams that provide spawning habitat for salmonids, a primary food source for wintering bald eagles, will require crossing by the cable. Since the proposed method for crossing streams is directional boring, construction is unlikely to impact salmonid survival, and therefore will not reduce bald eagle food resources (refer also to Section 4.3, Fisheries).

Columbian Sharp-Tailed Grouse

The Columbian sharp-tailed grouse has been extirpated from Oregon. No sharp-tailed grouse have been documented in eastern Oregon except for a small population that was reintroduced in 1998 near Enterprise, Oregon, in Wallowa County (Keister, 2000). This population is approximately 45 miles away from the proposed project. Since no grouse are known to exist near the project area, the proposed project will have no effect on the species.

4.6.2 BLM Sensitive Wildlife Species

Table 14 provides the potential effects the project will have on BLM sensitive wildlife species and mitigation that will be implemented along the route. Potential long-term impacts on wildlife species include loss of vegetation that might be used

for cover, loafing, nesting, perching or a food source, and potential direct mortality of individual animals during construction.

Short-term impacts consist of disturbance from construction noise, and temporary disruption impacts to species during installation of fiber optic cable. This impact will be short-term, lasting only as long as construction and restoration activities are underway in any given portion of the construction corridor. Suitable habitat exists adjacent to the ROW/TUP workspaces, but less habitat will be available for the same population numbers. The indirect effects of stress and habitat loss may contribute to some individual animal mortality in the long term.

Of particular concern, the project may potentially have impacts to pygmy rabbits, sage grouse, burrowing owl, sagebrush lizard and ferruginous hawk. Potential impacts to this habitat may occur within the Level 3 ROW and TUP workspaces; therefore, conservation measures have been incorporated into construction activities to reduce potential adverse impacts on their habitat. Construction activities may remove sagebrush to allow for equipment access. Only sagebrush that will not allow equipment access will be pruned or cut flush with the ground surface in order to reduce impacts. Noxious weed spread as a result of the project may contribute to the temporary loss of native vegetation that supports these species habitat. Mitigation measures outlined in Section 2.1 will be implemented to reduce impacts to soil and vegetation. Revegetation and noxious weed monitoring and treatment will reduce noxious weed spread to a potential short-term disturbance that will not likely contribute to cumulative impacts to these species habitat. Implementing reseeding with native species, limiting the removal of vegetation, and long-term noxious weed monitoring required by BLM and other agencies, will reduce long-term impacts to BLM and adjacent private property.

A qualified wildlife biologist will be onsite during construction on the following parcels to monitor for the presence of pygmy rabbit, sage grouse, burrowing owl, and sagebrush lizard. As identified is Section 2.1, pre-construction surveys for the ferruginous hawk will be completed to determine if any nest sites are located within ½ mile of the proposed route. Any known nesting sites within ½ mile of the proposed route will have a wildlife biologist on those parcels during construction.

- Pygmy rabbit (Parcel 3, 4, 13, 17, 19, 20, 21, and 22)
- Sage grouse (Parcel 3, 4, 13, 17, 19, 20, 21, and 22)
- Burrowing owl (Parcel 3, 4, 10, 11, 13, 17, 19, 20, 21, and 22)
- Sagebrush lizard (Parcel 1, 3, 5, 10, 11, 13 and 19)

There is a potential for direct mortality of individual animals during construction. This potential is most likely for small animals such as rodents, insects, and reptiles. By incorporating mitigation measures into construction activities, the project is not likely to contribute to the need for federal listing of these species.

Table 14. Effect Determination on Wildlife Species

Species	Status	Effect Determination	Mitigation Measures Implemented
Bald eagle	FTS	May affect, not likely to adversely affect	Stream crossings and water quality mitigation 4.1.2.
Burrowing owl	BS	Not likely to contribute to the need to list	Vegetation mitigation 4.1.4 and geology and soils mitigation 4.1.1.
Canada lynx	PFTS	No adverse effect	No potential habitat present along the route.
California wolverine	FSC; BS	No adverse effect	Geology and soils mitigation 4.1.1.
Columbia sharp-tailed grouse	PFTS	No adverse effect	No potential habitat occurs along the route.
Ferruginous Hawk	FCS; BS	Unknown effect	Pre-construction surveys will identify any nesting activities within 1/2 mile of the route. Effect determination will be made after surveys are completed. Mitigation will be developed in coordination with BLM.
Harlequin duck	FSC	No adverse effect	Stream crossings and water quality mitigation 4.1.2.
Mountain quail	BS	No adverse effect	Vegetation mitigation 4.1.4
Northern leopard frog	BS	No adverse effect	Stream crossings and water quality mitigation 4.1.2.
Northern sagebrush lizard	BS	Not likely to contribute to the need to list	Vegetation mitigation 4.1.4 and geology and soils mitigation 4.1.1.
Northern goshawk	FSC; BS	No adverse effect	Vegetation mitigation 4.1.4 and geology and soils mitigation 4.1.1.
Pacific fisher	FSC	No adverse effect	Unlikely to occur on a regular basis and low populations in Blue Mountains.
Preble's shrew	BS	No adverse effect	Stream crossings and water quality mitigation 4.1.2.
Pygmy rabbit	FSC; BS	Not likely to contribute to the need to list	Vegetation mitigation 4.1.4 and geology and soils mitigation 4.1.1.
Sage grouse	FCS; BS	Not likely to contribute to the need to list	Vegetation mitigation 4.1.4 and geology and soils mitigation 4.1.1.
Tailed frog	FSC	No adverse effect	No potential habitat occurs along the route.
Townsend's big-eared bat	FSC	No adverse effect	No potential habitat occurs along the route.
Yellow-billed cuckoo	BS	No adverse effect	No potential habitat occurs along the route.

Key: FSC = Federal Species of Concern
FTS = Federal Threatened Species
FES = Federal Endangered Species
PFTS = Proposed Federal Threatened Species
BS = BLM Sensitive Species

Source: David Evans and Associates, Inc., 1999
OREGON NATURAL HERITAGE PROGRAM, 2000

4.7 CULTURAL RESOURCES

Locations of historic-period developments, such as roads, trails, or buildings identified on General Land Office maps or in other historical documents during archival research, have and will be field checked, unless this has been done in previous field surveys. Areas with poor surface visibility or judged likely to contain subsurface artifact deposits will be recommended for augering or shovel testing. Eligible historic properties will be examined for potential construction impacts within the proposed route. In all cases, historic properties and unevaluated potentially significant cultural resources will be avoided. If significant or potentially significant cultural resources are discovered during the course of finishing uncompleted surveys[3], NHPA Section 106 clearance will be obtained prior to construction commencing on the respective site.

Although the preferred method of construction is to avoid significant and potentially significant cultural resources, in those cases where such resources can not be avoided, testing and evaluation work will be done to develop appropriate treatment plans to mitigate adverse impacts to the resources. Such activities on BLM lands will be coordinated with the BLM, SHPO, and appropriate tribes.

4.7.1 Archaeological Resources

The historic-period site located on the proposed route is a rectangular concrete foundation and associated artifacts. The type of structure represented by the foundation and the associated materials suggests that the site is a farmstead dating to about 1910 (Archaeological Investigations Northwest, 2000b). Avoidance recommendations involve boring beneath the archaeological deposits south of the foundation and monitoring the construction work in order to prevent any direct or indirect impacts to resources.

4.7.2 Oregon Trail

On parcels where the Oregon Trail is present, minimizing direct impacts on the historical resource and its associated setting will involve eliminating crossings of the Trail by the Level 3 ROW and locating the ROW one-quarter mile or more from the Trail as well as implementing cultural resource and visual resource mitigation measures as well as archaeological monitoring.

Indirect effects are those related to impacts of the project on the landscape setting. To minimize these effects, the ROW has been aligned on the far side of existing utilities,

[3] The only outstanding surveys (due to snow cover) at the time of the public comment period for this EA are on the bore staging areas on Parcel 1.

where feasible, with respect to the Trail. For example, in Parcel 19 the ROW is located on the east side of the Williams pipeline and WorldCom fiber optic ROWs, whereas the Oregon Trail is west of these utilities approximately 1500 feet. This type of alignment was not feasible on Parcel 13 due to topography. The Level 3 ROW and the Oregon Trail (approximately 1400-1600 feet apart) are located on the east side of existing utilities. The hill slope to the west is an obstacle to construction that prevents locating the Level 3 ROW further from the Oregon Trail.

To further reduce indirect impacts to the Oregon Trail, revegetation will use species consistent with existing vegetation and will be approved by an authorized BLM officer; contours will be restored to pre-construction conditions; marker posts will be painted an environmentally blending color and limited to four feet in height; and construction corridors will be limited to 15 feet to reduce visual impacts to the landscape. The proposed route on Parcel 13 and 19 will avoid the Oregon Trail and provide protection for trail related resources in a manner consistent with management direction in the Vale District.

Indirect effects to the Oregon Trail landscape setting on Parcel 14 may potentially occur from construction on adjacent private property. Loss of vegetation and potential noxious weed invasion associated with the directional bore operation to cross Powell Creek on private property could affect the landscape setting of the Oregon Trail since it is within the one-quarter mile APE. Implementing visual resource mitigation (Section 2.1.10) for the bore operation on private lands will reduce potential adverse effects to this viewshed.

Cumulative effects also refer to impacts on the setting of the Oregon Trail, such as incremental additions associated with grouped utility ROWs. The same measures taken to reduce indirect effects on visual aesthetics of the landscape setting also minimize cumulative effects. Although there are prior impacts–other utility ROWs–to the setting along the route of the Oregon Trail, Level 3 design measures were incorporated to minimize additional incremental impacts. Cumulative and indirect effects on the setting of the Oregon Trail will be avoided by these visual and project design measures.

4.7.3 Treaty Reserved Rights and Federal Trust Responsibility

The project will not interfere with American Indian treaty rights or the federal trust responsibilities of the BLM. If information about such resources becomes available during the project, every effort will be made to provide access to sacred sites and to usual and accustomed places protected by treaty rights.

There are no known sacred sites, treaty rights or usual and accustomed places that would be affected by the ROW. Authorization of the ROW will not affect access to public lands for the purpose of exercising treaty rights or religious practices.

4.7.4 Monitoring Plan

This project has been designed to avoid cultural resources identified and recorded to date. In addition, there is a possibility that presently unknown archaeological sites or other cultural resources may be encountered during construction. Areas where cultural resources have been identified or may be found during construction have been defined as sensitive locations where an archaeologist must be present to monitor all ground disturbing activities (see POD for monitoring assignments on each parcel). The following procedures must be followed during the construction monitoring of these sensitive areas.

1. All ground disturbing activities resulting from construction around identified cultural resource locations, or sensitive areas, will be monitored by an archaeologist. The monitor will be present at the start of any ground disturbing activities in these areas to observe the ground disturbing work and respond to any discoveries of potentially significant cultural materials. The archaeologist will work with the environmental inspector and the construction-crew supervisor and will expedite necessary site protection procedures to minimize damage to cultural resources and to minimize construction delays.

2. If cultural resources are encountered, an authorized BLM officer will be notified and work will cease until the find is assessed and written authorization to proceed is provided by the BLM.

3. If a cultural resource is discovered during the course of monitoring or construction, the resource must be evaluated for its eligibility to the National Register and, if the resource cannot be avoided, a mitigation plan will be developed before work can proceed. The ROW holder is responsible for all costs associated with monitoring, protection, evaluation of Section 106 compliance, development of a mitigation plan, and mitigation of cultural resources.

4. If artifacts or cultural materials suspected to represent an archaeological site are inadvertently uncovered when the archaeologist is not present, then work within 30 feet of the discovery will stop. The environmental inspector and crew supervisor will secure the area so that the location is protected from any further disturbance. The archaeologist will be called to assess the discovery. The archaeologist will examine and record the archaeological find and assess the potential significance of the discovery following definitions of “archaeological objects and sites” used in ORS 358.905 and all applicable federal laws (refer to Chapter 3). If the discovery is identified as a potentially significant site, the archaeologist will recommend ways of avoiding further impact to the site, if possible, and will coordinate with the appropriate agencies and offices depending on the nature of the exposed artifacts. If the potentially significant site cannot be protected in-place, the archaeologist will initiate the expedited process for obtaining an archaeological permit to recover endangered archaeological materials (see ORS 358.920 and OAR 736-51-060 through 736-51-090). If the

potentially significant site cannot be protected in-place, the archaeologist will obtain a permit to recover endangered archaeological materials in accordance with federal laws and regulations (or state laws on private lands).

5. If human remains are uncovered, the archaeologist will notify the environmental inspector and crew supervisor and will secure the area so that the remains are protected from further disturbance. Work in the vicinity of the human remains will cease and the remains will be protected in-place while the required coordination is conducted. The Accidental Find Policy (provided earlier in this chapter) will be followed for finds on BLM lands.

6. The archaeologist will document monitoring activities in sensitive areas. A daily activity summary will be prepared by the archaeologist conducting the monitoring, and monitoring report will be prepared for agency review at the conclusion of the monitoring activities. Copies of all cultural resource monitoring records and results will be provided to the BLM within 30 days of monitoring.

By employing the aforementioned measures to address direct, indirect and cumulative effects resulting from the project, no adverse effects to cultural resources are expected.

4.7.5 Paleontological Resources

Although the locality is disturbed by Highway 30, a paleontologist will monitor the installation of the Level 3 line to recover and evaluate any buried fossil remains that could be exposed. Authorization of the Level 3 ROW will not result in the loss of any scientifically important paleontological resources.

4.8 ECONOMIC AND SOCIAL ENVIRONMENT

The project will not create new permanent jobs, place demands on local housing or public services, change neighborhood aesthetics, create new residential or commercial development, or influence migration.

A potential long-term impact with adverse economic implications (e.g., decreasing land values) could result from the spread of noxious weeds generated by construction.

This project is expected to have short-term beneficial economic effects during construction. Project expenditures will filter through to the local economies. Long-term beneficial impacts resulting from the installation will include the general tax revenues for the local jurisdictions during the each year of operation; right-of-way payments and use fees; and other expenditures associated with long term use of the project.

Due to the mitigation commitments made by Level 3 (see Sections 2.1.5 and 4.5), any increase in noxious weed infestations due to the project will be short-term and will

not adversely affect long-term economic values and land productivity. Long-term economic benefits from tax revenues and federal, state and local right-of-way use and rental fees will be a beneficial economic effect of the project.

4.9 VISUAL RESOURCES

Potential long-term visual impacts along the right-of-way will be caused by the installation of marker posts at intervals along the route, and changes in landscape viewsheds until the site restoration is completed. In ACECs, potential impacts will be associated with historic resources, such as the Oregon Trail landscape setting. Impact assessment procedures do not allow dismissing any impacts on the setting of the Oregon Trail regardless of whether the setting has already been compromised by other projects along a utility corridor. Incremental encroachments on the setting must also be considered when developing mitigation measures.

Short-term visual impacts will occur during the construction phase of the project due to the presence of construction equipment and dust.

The presence of permanent, 4-foot-high marker posts within the 10-foot-wide right-of-way will constitute a long-term, minor visual impact.

Revegetation and noxious weed control measures (Section 2.1) will reduce the visual impacts of new disturbance over time. Visual resource mitigation (Section 2.1.10), particularly “feathering” edges of cleared vegetation will mitigate adverse visual impacts associated with straight line edges that indicate sharp contrast in a viewshed. It is expected that pre-construction conditions will be reestablished within ten years of construction completion.

4.10 RECREATION

Construction use of access ways could promote increased public access to BLM lands during and after construction. Increased access could lead to indirect impacts such as greater use of public lands for dispersed recreation. This could result in illegal hunting, vehicles being driven to create new roads or driven across streams, or dispersed clearing of vegetation and littering at undeveloped camping areas. Additional potential impacts affecting recreational uses are vegetation removal and possible changes to roadbed structure.

No new roads will be created, existing roads will be restored to pre-construction conditions, and recreational access will be limited during construction for safety reasons. Recreational access is not expected to increase substantially in the project area because mitigation measures will limit access during and after construction. However, some changes in access patterns may occur by recreational users.

4.11 LAND USE

There are a number of BLM livestock permittees who have permitted livestock within allotments on the proposed route. Grazing operations may be temporarily disrupted or altered during construction in these areas. There is also a potential for damage to rangeland improvements, such as fences, cattle guards, or water pipelines, in the short term during construction. Vegetation removal may result in a loss of forage until vegetation is reestablished.

There are several unpatented mining claims in the project area on BLM lands. Access to claim areas could be temporarily disrupted or altered, and disruption to mining claim operations could occur in the short term during construction. No long-term disruption is expected to result from the project.

Other potential land use impacts associated with installation of the network include those discussed previously under Recreation (Section 4.10).

Some impacts to land use from increased access are expectedSome changes in access patterns may occur. New disturbance from construction may encourage increased vehicle use that would disturb revegetation efforts in the short- to mid-term. Increased vehicular access could indirectly result in littering or dumping or trash, tree cutting, illegal hunting, and other unauthorized activities on public lands. In the long term, successful revegetation and restoration of the construction disturbance zones should reduce the possibility of vehicular travel in these areas.

Construction may temporarily inconvenience one or more grazing permittees or mining claimants, but no substantive impacts are expected.

Routine maintenance for the fiber optic network may include vehicular reconnaissance to inspect the right-of-way when it is within or along public road rights-of-way. This is not expected to cause any impacts since this type of traffic is consistent with other maintenance occurring along the road. In cases where the right-of-way is not directly adjacent to public roads, pedestrian reconnaissance will occur and vehicular use for ROW operation and maintenance will require authorization and environmental clearance by BLM or other appropriate granting authority.

4.12 AIR QUALITY

Construction impacts to air quality will be associated with the point of active construction and limited to the immediate area of construction and equipment movement on dirt roads. The primary sources of air quality impacts are blowing dust and vehicle emissions.

No residual impacts are anticipated since air quality standards will not be exceeded during construction activities. Revegetation of the right-of-way will also reduce the potential for blowing dust after the fiber optic cable has been installed.

4.13 NOISE LEVELS

Potential noise impacts will be caused by the use of heavy equipment to install the network. In areas without frequent road traffic, construction noise will exceed typical background levels particularly in areas where the Level 3 ROW parallels utility ROWs. Predominate ambient background noise in the project area is from the railroad and traffic along the roads. When rock saws, or heavy trenching through rock is needed, the ambient noise levels will be exceeded briefly. Since the progress of trenching installation methods can be 1,000 feet per day, areas where they are used will be temporarily impacted by noise.

No residual noise impacts are expected as a result of this project.

4.14 CRITICAL ELEMENTS OF THE HUMAN ENVIRONMENT

Air Quality (The Clean Air Act of 1995, as amended)

Air quality is addressed in sections 3.12 and 4.12 of this EA.

Areas of Critical Environmental Concern (Federal Land Policy Management Act of 1976)

ACECs are addressed in the cultural resources (3.7 and 4.7) and visual resources (3.9 and 4.9) sections of this EA.

Cultural Resources (National Historic Preservation Act of 1966, as amended)

Cultural resources are addressed in sections 3.7 and 4.7 of this EA.

Environmental Justice (Executive Order 12898)

The BLM administered public lands are used by minority and low-income groups for such activities as resource gathering or community uses. No issues or concerns regarding such uses were raised during scoping. There will be no known disproportionately high and adverse environmental impacts to these groups of people from authorization of the proposed Level 3 ROW on BLM lands.

Farm Lands (Prime and Unique) (Surface Mining Control and Reclamation Act of 1977)

Agricultural and grazing lands are addressed in sections 3.11 and 4.11 as part of the land use assessment of this EA. Exclusive Farm Use lands, as designated by Oregon Statewide Planning Goals, were crossed in other areas of eastern Oregon. These areas were permitted through the Conditional Use Permits issued by respective counties as addressed in Section 1.5.

Floodplain (Executive Order 11988, as amended)

As described in Section 4.2, most floodplains are avoided by directional boring, which will be staged outside the 100-year floodplain boundaries. Where floodplains are crossed by plowing or trenching (as described in Section 4.2), these crossings have been approved by BLM.

Invasive Species (Noxious Weeds)

Noxious weeds are addressed in sections 3.5 and 4.5 of this EA.

Native American Religious Concerns (American Indian Religious Freedom Act of 1978)

This critical element is addressed in sections 3.7 and 4.7 as part of the cultural resources assessment of this EA.

Threatened or Endangered Species (Endangered Species Act of 1973, as amended)

Threatened and endangered species are addressed in sections 3.4 and 4.4 (fisheries), 3.5 and 4.5 (plants), and 3.6 and 4.6 (wildlife) of this EA.

Water Quality, Surface or Ground (Safe Drinking Water Act of 1974, as amended and Clean Water Act of 1977)

Water quality is addressed in sections 3.2 and 4.2 of this EA.

Wetlands/Riparian Zones (Executive Order 11990)

Wetlands, streams and Riparian Habitat Conservation Areas (RHCAs) are addressed in sections 3.2 and 4.2 of this EA.

4.15 NO ACTION ALTERNATIVE

The No Action Alternative will avoid all potential adverse environmental impacts that may result from this project. The No Action Alternative will not provide for an increase in capacity for existing Internet providers and will not allow for an alternate

provider of Internet services to users. The No Action Alternative will not provide an alternate, or more diverse, route to the existing long-distance telecommunications companies lines if a catastrophic event occurred that caused a break in the existing fiber optic line.

4.16 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES

Irreversible commitments of resources refer to a permanent loss or use of a nonrenewable resource, whereas irretrievable describes temporary losses or use of a renewable resource (BLM, 1998). In this section, irreversible commitments of resources are described in terms of permanent losses/uses and irretrievable commitments of resources are differentiated into short term (0-5 years) and long term (5-plus years) temporary losses/uses.

4.16.1 Irreversible Commitments of Resources

This project will result in the irreversible commitment of materials needed to construct the facilities for this project, although some of the materials used may be recyclable after the completion of their useful lives. Consumption of fuel and other petroleum product supplies used in construction activities will be irreversible. Upon abandonment of the network, conduits and fiber optic cable will be left buried, and thus will constitute a permanent loss of materials, to minimize future excavation and associated environmental impacts. No irreversible losses of fish, wildlife or plant species, soils, streams and wetlands, cultural or paleontological, or other natural resources are expected to result from the proposed action because of the mitigation measures incorporated into the proposal designed to protect against permanent loss of these resources.

4.16.2 Short Term Irretrievable Commitments of Resources

Temporary resource losses or uses of renewable resources occurring within the first five years after construction is completed include the potential loss of or disturbance to soils, streams and wetlands, vegetation and visual aesthetics. Some of these losses/uses may have direct and indirect impacts to fisheries (e.g., water quality impacts from erosion or bore frac-outs), wildlife and plant species (e.g., vegetation that provides suitable habitat), noxious weeds (e.g., non-native vegetation competition), and cultural resources (i.e., the Oregon Trail landscape setting).

In addition, land use and recreational use of existing dirt roads may be affected by increased disturbance to roads and creation of new roads. This is not a conventional irretrievable loss to the road; however, it can encourage noxious weed spread and can result in temporary loss of native vegetation that provides suitable habitat. There is a possibility that the ROW may be perceived to be a new road due to its initial

disturbance. To correct and mitigate this potential effect, revegetation mitigation measures will be implemented. Monitoring and any necessary reseeding will be implemented in the short term to reestablish the ROW to its pre-construction conditions, which typically in these instances is non-roaded and consists of shrub-steppe or steppe vegetation. However, reestablishment of vegetation is expected to take between five and ten years.

Mitigation measures implemented for revegetation will initiate the process to reestablish pre-construction conditions. This is not an immediate process, therefore the resources directly and indirectly connected to native vegetation will be affected in the first five to ten years post-construction. These impacts are not expected to adversely affect the resources in this short term or longer term as described in the respective sections earlier in this chapter.

4.16.3 Long Term Irretrievable Commitments of Resources

Five years after construction completion, temporary losses of resources are expected to be declining due to the restoration of soils and roads, partial reestablishment of vegetation, noxious weed control, and restoration of streams and wetlands. Mitigation measures implemented successfully will become progressively more effective by five years post-construction due to species growth cycles, succession patterns, and natural processes. Visual impacts from the proposed action will dissipate as revegetation takes hold. Similarly, impacts to vegetation and wildlife habitat will lessen as suitable habitat reestablishes and noxious weed spread monitoring and control occurs along disturbance areas associated with project construction.

Restoring roads to pre-construction conditions, including restoration required by subsequent BLM authorized operation and maintenance activities to the Level 3 network and associated access to handholes, will reduce long term impacts to land use, recreation, and associated soils, vegetation and noxious weed spread. Partial revegetation of the ROW after five years will reduce the perception that the ROW is a new road, thus the potential of creating new access to BLM lands is likely to diminish.

4.17 CUMULATIVE IMPACTS

Cumulative impacts for the proposed action must address past, present, and reasonably foreseeable future actions. The following discussion of cumulative impacts takes into account the connectivity of the route and any impacts the line would have on resources on BLM lands, whether the impacts resulted from Level 3's actions on federal or non-federal lands.

Mitigation measures and associated long-term treatment plans are key factors in mitigating adverse impacts. As a result of obtaining a ROW grant and TUP from the BLM, Level 3 will be responsible for implementing wetland restoration, achieving successful revegetation, and controlling noxious weed spread to establish pre-

construction conditions. Further discussion on specific cumulative impacts of concern and mitigation is summarized below. The proposed Level 3 project could potentially contribute impacts to existing environmental conditions of current concern in eastern Oregon, including:

- Wetlands and water resources—water quality, riparian vegetation and habitat;
- Increased use/development of unimproved roads, leading to increases in unauthorized use of public lands;
- Developments on cultural resource landscapes; and
- Noxious weed spread.

Wetlands and Water Resources

The proposed action may contribute to localized, short-term and long-term impacts to water resources, and has the potential for causing indirect adverse impacts to related resources such as fisheries. The limited amount of disturbance proposed in areas near water resources, and the performance of the mitigation measures outlined in Section 2.1, is expected to lessen the intensity and duration of these impacts.

Access Roads and Use of Public Lands

Disturbances to soils caused by construction to install the network and routine traffic on access roads on BLM lands have the potential to cause erosion and increased road development on public land. The proposed project has the potential to increase vehicular access across BLM lands along the newly disturbed ROW after construction. This, in turn, could lead to indirect impacts of littering or dumping or trash, wood cutting, illegal hunting, dispersed camping and associated vegetation clearing, and disturbance to project-related revegetation efforts.

The proposed project will widen the area of disturbance along existing roads and utility ROWs on BLM lands, and will add another 30-foot-wide disturbance in the short term, and another 10-foot-wide permanent ROW across BLM parcels. The presence of the additional utility network will also increase the amount of maintenance activities and traffic along this area of utility installations.

Where the proposed project is adjacent to public roads, maintenance and inspection will be done from those roads. Where public roads are not present, future inspection of the ROW will be done on foot. This will reduce the potential for the project to contribute cumulatively to vehicular access in these areas. Access to handholes (for repairs or for adding additional fiber optic cables into the conduit system) will be permitted separately with BLM for any handhole locations not accessible via established public roads. That authorization is expected to be conditioned in order to protect resources and maintain existing levels of long-term disturbance.

The project's effects on recreation, grazing, mining, and general access have been described earlier. No substantive, long-term changes to land uses are expected to occur. The project will contribute in the short-term to potential effects of increased access, soil disturbance and loss of some topsoil, and potential noxious weed spread. Revegetation, monitoring, and other mitigation measures outlined in Section 2.1 will prevent long-term contributions to adverse impacts on land uses.

Level 3's proposed project involves the burial of 12 conduit, two of which will be filled initially. The installation of extra conduit will reduce the extent of new surface disturbance in the future in the area of the ROW. (Future proposals to install fiber optic cable in any of the remaining ten conduit will be addressed at the time of application for NEPA compliance and permitting, since those activities are not part of the proposed action assessed here.) There is some potential that the conduit network between handholes will need to be excavated in places for repairs or to add fiber optic cables in the future. Generally, however, most system repairs and installation of additional fiber optic cable in extra conduit can be accomplished through access at the handholes only. This will limit the disturbances necessary to expand the network or add telecommunications capacity in the future. The burial of extra conduit will be a beneficial contribution to cumulative utility installation in the future.

Oregon Trail Landscape

Developments on the Oregon National Historic Trail landscape have escalated over the last few decades with increasing use of utility corridors for petroleum, natural gas, electric transmission, and communications lines. The cumulative effects of these developments on the landscape or setting of the Oregon Trail has become a concern of the BLM.

To address these concerns, the definition of Area of Potential Effect was expanded for the proposed project to encompass the landscape seen from the route of the Oregon Trail within one-quarter mile on BLM parcels. Because of the placement of the project adjacent to existing roads and utility ROWs, restoration and revegetation commitments, and the distance maintained between the proposed route and the Trail, the project is not expected to contribute any long-term, cumulative impacts to the Oregon Trail or its setting.

Noxious Weeds

The construction of the Level 3 project through eastern Oregon has introduced a potential linear spread of noxious weeds. The spread of noxious weeds across the affected environment of the Level 3 project has the potential to affect native vegetation, wildlife habitat, and land values. This risk in Baker and parts of Malheur Counties may have been increased due to the staging of equipment from an infested knapweed site during previous construction (refer to Section 3.5 and 4.5).

To mitigate adverse effects, measures have been incorporated into the proposed action, which include preventative measures and a five-year monitoring and treatment

protocol. This mitigation, in conjunction with Level 3's required compliance with other applicable federal, state and local permits that have noxious weed control conditions, will reduce the potential of the past, present, and proposed construction contributing to long-term noxious weed spread in eastern Oregon.

Conclusion

This EA discloses a complete picture of Level 3's proposal which includes the impacts of the proposed project on BLM-administered public land, but also takes into account the connectivity of the route and any impacts the line would have on resources on BLM lands, whether the impacts resulted from Level 3's actions on federal or non-federal lands.

The proposed route comprises 51,973 linear feet (9.8 miles) on twenty BLM parcels. The ROW Grant requested by Level 3 is to establish a ten-foot wide ROW across BLM lands (11.9 acres) and the TUP requests an additional 44.7 acres for temporary construction workspace.

Mitigation measures presented in the EA and specific construction guidelines addressed in the POD are expected to help reduce direct, indirect and cumulative adverse impacts of this project to resources on BLM and adjacent lands.

4.18 FINDING OF NO SIGNIFICANT IMPACT

FINDING OF NO SIGNIFICANT IMPACT
LEVEL 3 COMMUNICATIONS, LLC APPLICATION for ROW OR 55045
ENVIRONMENTAL ASSESSMENT OR-035-00-01
FINDING OF NO SIGNIFICANT IMPACT

The Baker Field Office of the Bureau of Land Management (BLM), Vale District, has analyzed a proposal to authorize the construction, operation and maintenance of 9.8 linear miles of buried fiberoptic cable telecommunications network across BLM-administered public lands in Union, Baker and Malheur Counties, Oregon. The attached Environmental Assessment (EA) OR-035-00-01 contains a detailed description of the proposed action and the no-action alternative. This EA was prepared under the guidance provided by the Baker Resource Management Plan Record of Decision, Bureau of Land Management, July 1989; the Southern and Northern Malheur Resource Area Management Framework Plan, 1983; and additional guidance for the Oregon Trail Birch Creek Proposed Area of Critical Environmental Concern from the (Draft) Southeast Oregon Resource Management Plan, 1999.

The first alternative analyzed is the proposed action, granting a FLPMA Title V Right-of-Way (ROW) and Temporary Use Permit (TUP) to authorize Level 3 Communications, LLC, to construct, operate and maintain a buried fiberoptic telecommunications network across BLM-administered public lands. The proposed action would cross 20 non-contiguous parcels of BLM-administered public lands in the Baker and Malheur Resource Areas. The total new surface disturbance for the right-of-way would amount to about 12 acres, with up to an additional 45 acres of potential disturbance for temporary construction width and access. Most of the route across BLM lands is located adjacent to existing roads or utility rights-of-way. The project design features and mitigation measures proposed will provide protection for critical resources.

The second alternative analyzed is the "no action" (no authorization) alternative, which would disallow the construction of the fiber optic network proposed by Level 3 Communications, LLC.

The EA and supporting documents address critical elements of the human environment. The primary resources of concern addressed in the EA are water resources and wetlands, the Oregon Trail and its historic setting, and the potential for spread of noxious weeds, including associated impacts to wildlife and native vegetation, and land use and economic productivity.

I have determined that none of the alternatives will have a significant impact on the quality of the human environment. For this reason, an environmental impact statement is unnecessary and will not be prepared.

_____ _____

Penelope Dunn Woods Date
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APPENDIX A

Pacfish / Infish / Screens Information Guide for Riparian Habitat Conservation Areas

Pacfish/ Infish/ Screens Information Guide

For Riparian Habitat Conservation Areas (RHCAs)

Standard Width Defining Interim RHCAs

Four categories of stream or water body, and the standard widths for each are:

Category 1 – **Fish-bearing streams:** Interim RHCAs consist of the stream and the area on either side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year flood plain, or to the outer edges of riparian vegetation, or to a distance of two site-potential trees, or 300 feet slope distance (600 feet, including both sides of the stream channel), whichever is greatest.

Category 2 – **Permanently flowing non-fish-bearing streams:** Interim RHCAs consist of the stream and the area on either side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year flood plain, or to the outer edges of riparian vegetation**,** or to a distance equal to the height of one site-potential tree, or 150 feet slope distance (300 feet, including both sides of the stream channel), whichever is greatest

Category 3 – **Ponds, lakes, reservoirs, and wetlands greater than 1 acre:** Interim RHCAs consist of the body of water or wetland and the area to the outer edges of the riparian vegetation, or to the extent of the seasonally saturated soil, or to the extent of moderately and highly unstable areas, or to a distance equal to the height of one site potential tree, or 150 feet slope distance from the edge of the maximum pool elevation of constructed ponds and reservoirs or from the edge of the wetland, pond, or lake, whichever is greatest.

Category 4 – **Seasonally flowing or intermittent streams, wetlands less than 1 acre, landslides, and landslide-prone areas:** This category includes features with high variability in size and site-specific characteristics. At a minimum the interim RHCAs must include:

- the extent of landslides and landslide-prone area;
- the intermittent stream channel and the area to the top of the inner gorge;
- the intermittent stream channel or wetland and the area to the outer edges of the riparian vegetation;

- for Priority Watershed, the area from the edges of the stream channel, wetland, landslide, or landslide-prone area to a distance equal to the height of one site-potential tree, or 100 feet slope distance, whichever is greatest;

- for watersheds not identified as Priority Watersheds, the area from the edges of the stream channel, wetland, landslide, or landslide-prone area to a distance equal to the height of one-half site potential tree, or 50 feet slope distance, whichever is greatest.

In non-forested rangeland ecosystems, the interim RHCA width for permanently flowing streams in categories 1 and 2 is the extent of the 100-year flood plain.

General Riparian Area Management

RA-1 Identify and cooperate with Federal, Tribal, State, and local governments to secure instream flows needed to maintain riparian resources, channel conditions, and aquatic habitat.

RA-2 Trees may be felled in Riparian Habitat Conservation Areas when they pose a safety risk. Keep felled trees on site when needed to meet woody debris objectives**.**

RA-3 Apply herbicides, pesticides, and other toxicants, and other chemicals in a manner that does not retard to prevent attainment of Riparian Management Objectives and avoids adverse affects on inland native fish.

RA-4 Prohibit storage of fuels and other toxicants within Riparian Habitat Conservation Areas. Prohibit re-fueling within Riparian Habitat Conservation Areas unless there are no other alternatives. Refueling sites within a Riparian Management Area must be approved by the BLM. Notify Bureau of Land Management in case of any spills, and have an approved spill containment plan.

RA-5 Locate water drafting sites to avoid adverse effects to inland native fish and instream flows, and in a manner that does not retard or prevent attainment of Riparian Management Objectives.

APPENDIX B

Right-of-Way and Temporary Use Permit Dimensions

APPENDIX C

Noxious Weed Inventory

APPENDIX D

Resource Survey Status

ATTACHMENT I

Access Route Maps

Note: This section is not included in electronic version of document.

ATTACHMENT II

Proposed Route and Resource Maps

Note: This section is not included in electronic version of document.